ORDER NO. KM40603006CE

Service Manual

Telephone Equipment

AOH and Caller ID Compatible

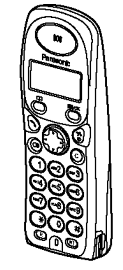
KX-TG1105RUS
KX-TG1105RUT
KX-TG1106RUS
KX-TG1106RUT
KX-TGA110RUS
KX-TGA110RUT

Digital Cordless Phone

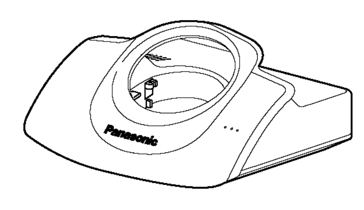
Silver Version

Titanium Black Version

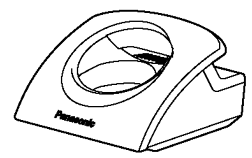
(for Russia)



KX-TGA110RUS/RUT
(HANDSET)



KX-TG1105RUS/RUT
(BASE UNIT)



(CHARGER UNIT)

Configuration for each model

Model No	Base Unit	Handset	Charger
KX-TG1105	1	1 (TGA110)	
KX-TG1106	1	2 (TGA110)	1

SPECIFICATION

Standard:	DECT (Digital Enhanced Cordless Telecommunications)
Number of channels:	120 Duplex Channels
Frequency range:	1.88 GHz to 1.9 GHz
Duplex procedure:	TDMA (Time Division Multiple Access)
Channel spacing:	1728 kHz
Bit rate:	1152 kbit/s
Modulation:	GFSK (Gaussian Frequency Shift Keying)
RF Transmission Power:	Average: Approx. 10 mW Maximum: Approx. 250 mW
Operation range:	Up to 300 m outdoors, Up to 50 m indoors
Analog telephone connection:	Telephone Line
Power source:	AC Adaptor (220-240V AC, 50 Hz)
Power consumption,	
Base Unit:	Standby: Approx. 3.5 W / Maximum: Approx. 9.2 W
Charger Unit:	Standby: Approx. 0.6 W / Maximum: Approx. 5.0 W
Battery life, Handset (if batteries are fully charged):	Standby: Up to 120 hours (Ni-MH) Talk: Up to 10 hours (Ni-MH)
Operating conditions:	5 °C - 40 °C, 20 % - 80 % relative air humidity (dry)
Dimensions, Base Unit (D x W x L):	Approx. 58 mm x 123 mm x 115 mm
Dimensions, Handset (D x W x L):	Approx. 143 mm x 48 mm x 32 mm
Dimensions, Charger Unit (D x W x L):	Approx. 60 mm x 86 mm x 84 mm
Mass (weight), Base Unit:	Approx. 180 g
Mass (weight), Handset:	Approx. 120 g
Mass (weight), Charger Unit:	Approx. 120 g

- Specifications are subject to change.
- The illustrations used in this manual may differ slightly from the actual product.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product the printed circuit boards will be marked PbF.
Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.

Note:

Because CONTENTS 4 is the extract from the Operating Instructions of this model, it is subject to change without notice. You can download and refer to the original Operating Instructions on TSN Server for further information.

CONTENTS

1 ABOUT LEAD FREE SOLDER (PbF: Pb free)

Note:

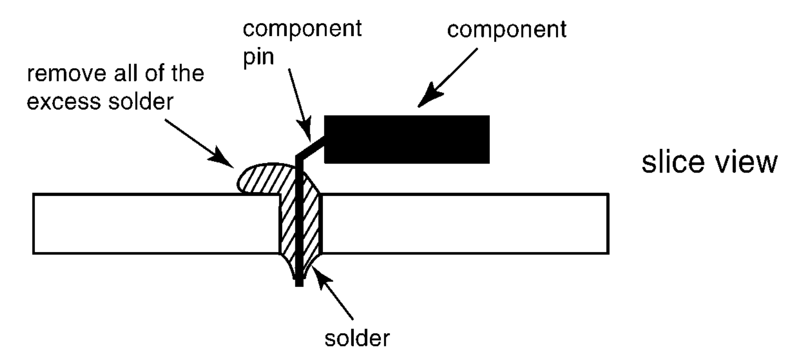
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF solder when discussing the lead free solder used in our manufacturing process which is made from Tin (Sn), Silver (Ag), and Copper (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder.

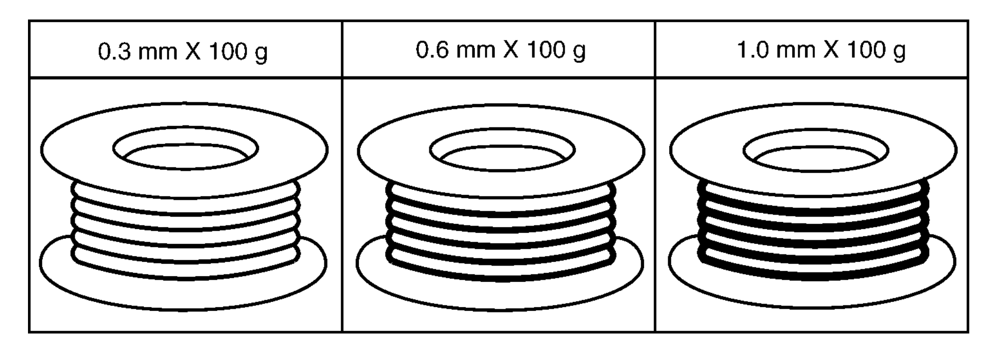
Caution

- PbF solder has a melting point that is 50°F ~70°F (30°C ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700°F ± 20°F (370°C ± 10°C).
- Exercise care while using higher temperature soldering irons.: Do not heat the PCB for too long time in order to prevent solder splash or damage to the PCB.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100°F (600°C).
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See the figure below).



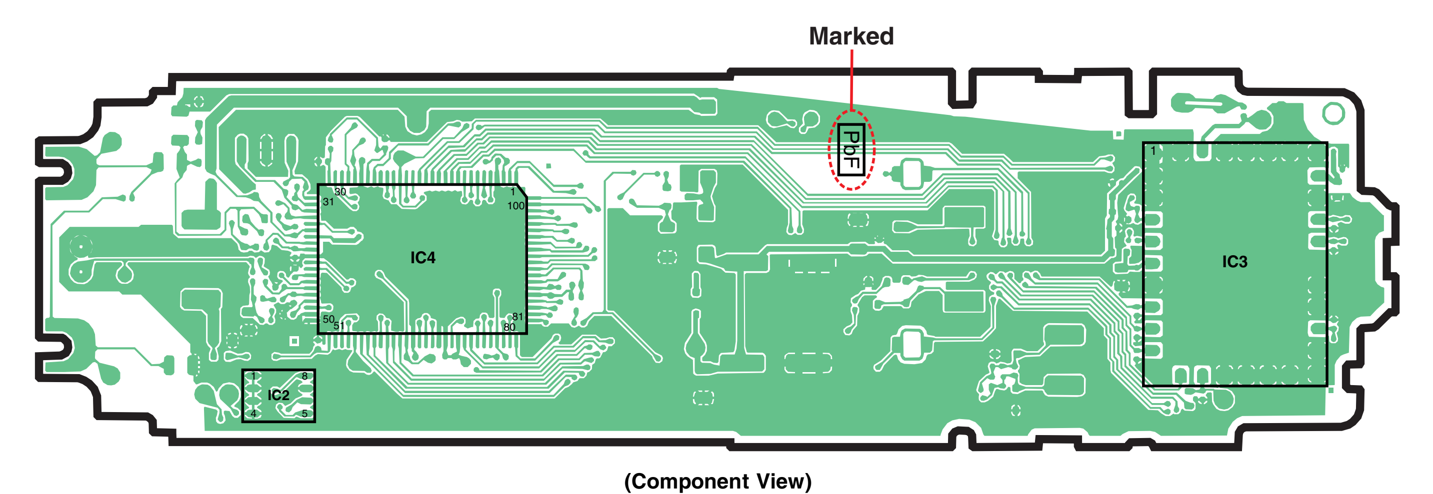
1.1. Suggested PbF Solder

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper (Sn+Ag+Cu), you can also use Tin and Copper (Sn+Cu) or Tin, Zinc, and Bismuth (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials. The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3 mm, 0.6 mm and 1.0 mm.



1.2. How to recognize that Pb Free solder is used

(Example: Handset P.C.B.)



(Component View)

Note:

The location of the “PbF” mark is subject to change without notice.

2 FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.

When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover the plastic parts boxes with aluminum foil and ground them.
2. Ground the soldering irons.
3. Use a conductive mat on the worktable.
4. Do not touch IC or LSI pins with bare fingers.

3 CAUTION

1. Danger of explosion if battery is incorrectly replaced.
2. Replace only with the same or equivalent type recommended by the manufacturer.
3. Dispose of used batteries according to the manufacture’s Instructions.

4 OPERATING INSTRUCTIONS

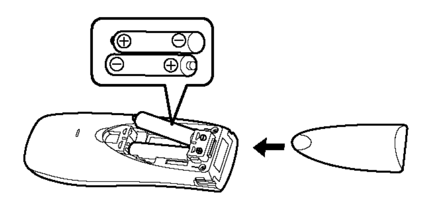
4.1. Battery

4.1.1. Battery Installation

Insert the batteries negative (⊖) terminal first. Close the handset cover.

Note:

- Use only the included rechargeable P03P (HHR-4EPT or HHR-55AAAB) batteries.



4.1.2. Battery Charge

Place the handset on the base unit or charger for about 7 hours before initial use.

Battery strength

Battery icon	Battery strength
	Fully charged.
	High
	Medium
	Low
	Needs to be charged.

Panasonic Ni-MH battery performance

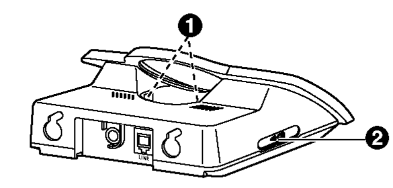
Operation	Operating time
In continuous use	10 hours max.
In continuous standby mode	120 hours max.

Note:

- It is normal for batteries not to reach full capacity at the initial charge. Maximum battery performance is reached after a few complete cycles of charge/discharge (use).
- Actual battery performance depends on a combination of how often the handset is in use and how often it is not in use (standby).
- Even after the handset is fully charged, the handset can be left on the base unit or charger without any ill effect on the batteries.
- The battery strength may not be displayed correctly after you replace the batteries. In this case, place the handset on the base unit or charger and charge for at least 7 hours.

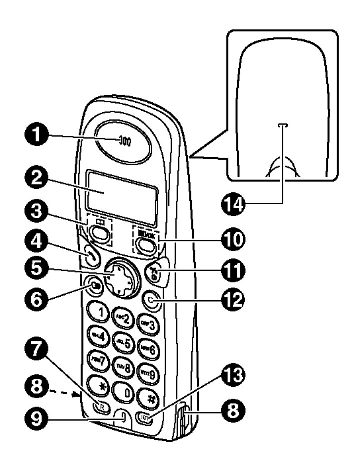
4.2. Location of Controls

4.2.1. Base Unit



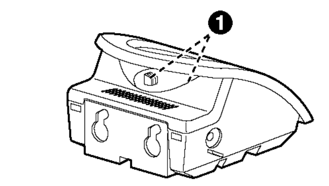
❶ Charge contacts
❷ 【•))】 (Page)

4.2.2. Handset



❶ Receiver
❷ Display
❸ 【📖】 (Phonebook)
❹ 【↖】 (Talk)
❺ Navigator (【▲】/【▼】/【▶】/【◀】)
❻ 【○●】 (Redial/Pause)
❼ 【R】 (Recall)
❽ Charge contacts
❾ Microphone
❿ 【☰/OK】 (Menu/OK)
⓫ 【↗⏻】 (Off/Power)
⓬ 【C】 (Clear)
⓭ 【INT】 (Intercom)
⓮ Ringer

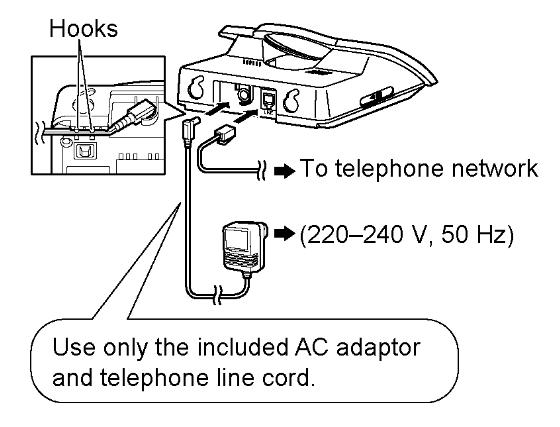
4.2.3. Charger (KX-TG1106 only)



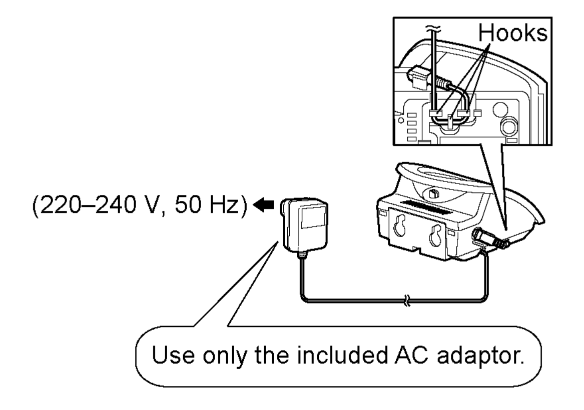
❶ Charge contacts

4.3. Connections

4.3.1. Base Unit



4.3.2. Charger (KX-TG1106 only)



Note:

- Never install telephone wiring during a lightning storm.
- Do not connect the AC adaptor to a ceiling-mounted AC outlet, as the weight of the adaptor may cause it to become disconnected.
- To turn the power on, press 【 】 for about 1 second.
- To turn the power off, press 【 】 for about 2 seconds.

4.4. Guide to Settings

4.4.1. Base Unit

To customise the base unit:

1 【☰/OK】

2 Press 【▲】 or 【▼】 to select "**SETTING BS**". → 【▶】
- "**INPUT CODE**" is displayed.

3 Enter the desired code number. Follow the instructions in the "Feature" column of the chart.
- To exit the operation, press 【↖⏻】.

Code No.	Feature (Default setting)	Remarks (selectable options)
【0】	Reset base unit to its default settings.*1 – Enter base unit PIN (default: "0000").*2 → 【▶】	-
【3】	Dialling mode (Pulse)	【1】 Tone/【2】 Pulse
	Flash time (700 ms)*3 – Enter base unit PIN (default: "0000").*2 → 【2】 → 【1】 – Select the desired setting by pressing 【1】 for 100 ms, 【2】 for 700 ms or 【3】 for 200 ms. → 【▶】	【1】 for 100ms/【2】 for 700ms/ 【3】 for 200ms
	Select CLIP mode	【1】 Learn mode/【2】 DTMF CLIP/ 【3】 FSK CLIP/【4】 AOH
【5】	Change base unit PIN ("0000").*4 – Enter the current 4-digit base unit PIN.*2 – Enter the new 4-digit base unit PIN. – Enter the new 4-digit base unit PIN again.	-
【6】	Call restriction*5 ■ **Setting call restriction** – Enter base unit PIN (default: "0000").*2 → Press the desired handset numbers. → 【▶】 – Enter the phone number to be restricted (8 digits max.). ● To select a different memory location, press 【▶】 and enter a number. – 【▶】 ■ **Turning on/off call restriction** – Enter base unit PIN (default: "0000").*2 ● Handset number will be displayed. A flashing number indicates call restriction is on; a non-flashing number indicates call restriction is off. – Press the desired handset numbers to turn on/off. → 【▶】	Up to 10 numbers
	Emergency number ("03", "01", "02", "04") *6 – Enter base unit PIN (default: "0000").*2 → 【✱】 ■ **Storing:** – Enter the emergency number (8 digits max.). ● To select a different memory location, press 【▶】 and enter a number. – 【▶】 ■ **Editing:** Press 【▶】 to display the desired number. → 【C】 → Enter the new emergency number. → 【▶】	Up to 4 numbers
【✱】	Date and time	-
【R】	Number of digits to be displayed	【1】 (number of phone digits): (4 to 7)
	Request signal	【2】 (length request signals): (100-300 ms; divisible by 10) 【3】 (delay between request signals): (100-900ms; divisible by 50). 【4】 (number of request signals): (1 to 5) 【5】 (delay to answer request signals): (100-900ms; divisible by 50).
【◯●】	Select caller identification mode (AOH)	CID ON (AOH Service)/CID OFF (Caller ID service)

*1 Only the emergency number setting will not be reset.
*2 If you forget your PIN, see "**For Service Hint**".
*3 Change the flash time if necessary to suit your PBX or service provider/telephone company. For further information, consult your nearest Panasonic service centre.
*4 If you change the PIN, please write down your new PIN as the unit will not reveal the PIN to you.
*5 Call restriction feature restricts the handset from dialling certain phone numbers. You can assign up to 10 phone numbers (memory locations 0–9) to be restricted.
*6 Emergency number feature determines which phone numbers may be dialled while the call bar feature is turned on. A total of 4 emergency numbers (memory locations 1–4) can be stored.

Cross Reference:

For Service Hint (P.11)

4.4.2. Handset

To customise the handset:

1 [☰/OK]
2 Press [▲] or [▼] to select "SETTING HS". → [▶]
3 Press [▲] or [▼] to select the desired item in the handset settings menu. → [▶]
4 Press [▲] or [▼] to select the desired item in the sub-menu. → [▶]
5 Press [▲] or [▼] to select the desired setting, or follow the instructions in the "Feature" column of the chart.
- To exit the operation, press [⏻].

Handset settings menu	Sub-menu	Feature (default setting)	Remarks (selectable options)
TIME ALARM	SET TIME	Set time alarm. – Enter the desired hour and minute (24-hour time entry). → [▶] – Select the desired setting. → [▶]	–
	SET ALARM	Change alarm frequency ("OFF").	OFF/ONCE/REPEAT DAILY
RINGER OPT	RINGER VOL	Handset ringer volume (level 6)	RINGER OFF/1 to 6
	EXT RINGER	Ringer type for external calls ("RING TYPE 1")	1 to 20 (6 Bells and 14 Melodies)
	INT RINGER	Ringer type for internal calls ("RING TYPE 1")	1 to 20 (6 Bells and 14 Melodies)
	PAGING	Ringer type for page ("RING TYPE 1")	1 to 20 (6 Bells and 14 Melodies)
	ALARM	Ringer type for alarm ("RING TYPE 1")	1 to 20 (6 Bells and 14 Melodies)
TONE OPT	KEY TONE	Keytones on/off ("ON")	ON/OFF
	CALL WAITING	Call waiting tone on/off ("ON")	ON/OFF
	RANGE ALARM	Range alarm on/off ("OFF")	ON/OFF
	BATTERY LOW	Battery low alarm on/off ("ON")	ON/OFF
DISPLAY OPT	STANDBY MODE	Standby mode display ("CLOCK")	CLOCK/OFF/BS NO/HS NO
	TALK MODE	Talk mode display ("TALK TIME")	TALK TIME/PHONE NO
	LANGUAGE	Display language ("ENGLISH")	10 languages selectable
CALL OPT	CALL BAR	Call bar on/off ("OFF")*1 – Enter handset PIN (default: "0000").*2 – Select the desired setting. → [▶]	ON/OFF
	DIRECT NO	Store direct call number.*3 – Enter a phone number (24 digits max.). – [☰/OK] 2 times → "ON" → [▶]	Up to 1 number
	SET DIRECT	Direct call on/off ("OFF")	ON/OFF
OTHER OPT	HSPIN CHANGE	Change handset PIN ("0000").*4 – Enter the current 4-digit handset PIN.*2 – Enter the new 4-digit handset PIN. – Enter the new 4-digit handset PIN again.	–
	AUTO TALK	Auto talk on/off ("OFF")*5	ON/OFF
RESET HS	————	Reset handset to its default settings. – Follow steps 1, 2, and 3. – Enter handset PIN (default: "0000").*2 – [▼] → [▶]	–

*1 Call bar feature prohibits making outside calls. When call bar is turned on, only emergency calls can be made.
*2 If you forget your PIN, see "**For Service Hint**".
*3 Direct call feature allows you to dial a preset phone number simply by pressing [☎]. No dialling is necessary.
*4 If you change the PIN, please write down your new PIN as the unit will not reveal the PIN to you.
*5 Auto talk feature allows you to answer calls simply by lifting the handset off the base unit or charger. You do not need to press [☎].

Cross Reference:

For Service Hint (P.11)

4.5. For Service Hint

Items	Contents
Battery	You could use other rechargeable batteries sold in a market, but the unit is not guaranteed to work properly.
PIN Code	**Changing the PIN** **Handset PIN:** **1** 【☰/OK】 → "SETTING HS" → 【▶】 **2** "OTHER OPT" → 【▶】 **3** "HSPIN CHANGE" → 【▶】 → 【*】【7】【0】【0】【0】 **4** Enter the new 4-digit handset PIN. **5** Enter the new 4-digit handset PIN again. → 【OFF】 **Base unit PIN:** **1** 【☰/OK】 → "SETTING BS" → 【▶】 **2** 【5】 → 【*】【7】【0】【0】【0】 **3** Enter the new 4-digit base unit PIN. **4** Enter the new 4-digit base unit PIN again. → 【OFF】

5 DISASSEMBLY INSTRUCTIONS

5.1. Base Unit

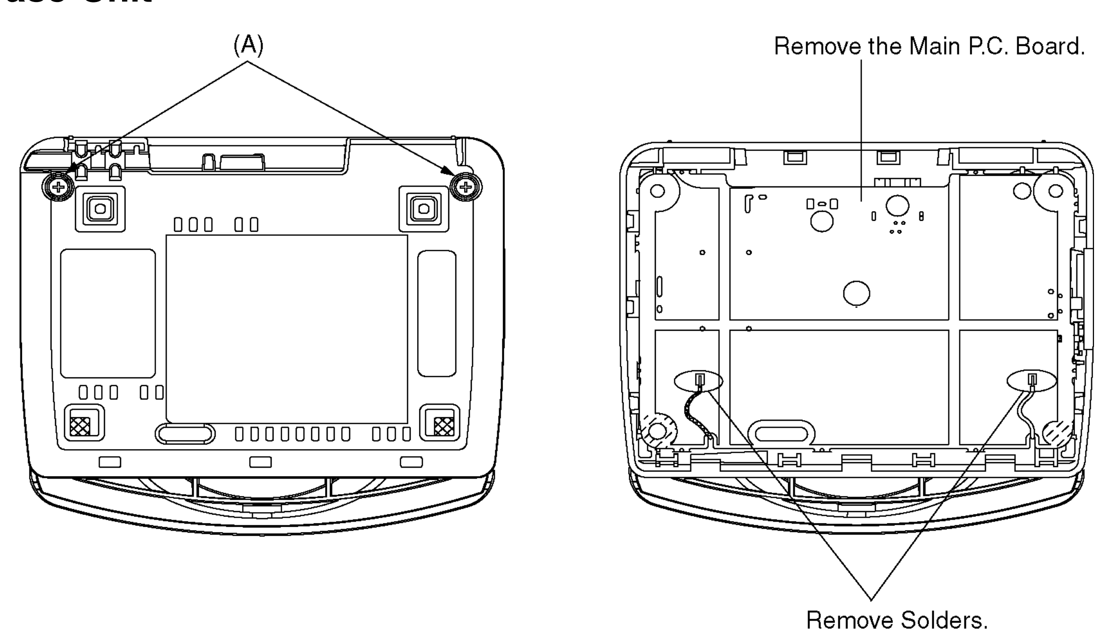


Fig. 1

Fig. 2

Shown in Fig.-	To Remove	Remove
1	Cabinet Cover	Screws (2.6 × 12)..........(A) × 2
2	Main P.C. Board	Solders
		Main P.C. Board

5.2. Handset

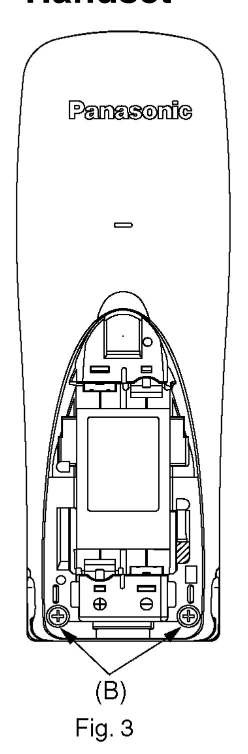


Fig. 3

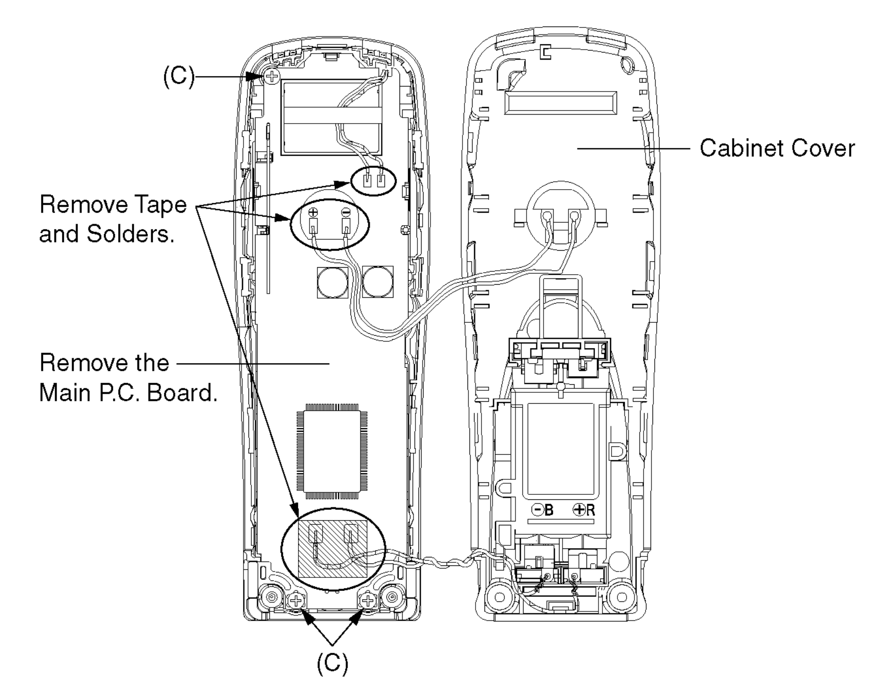
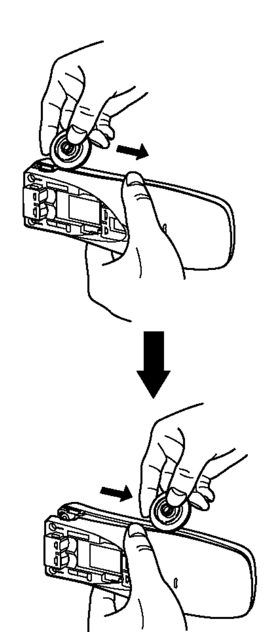
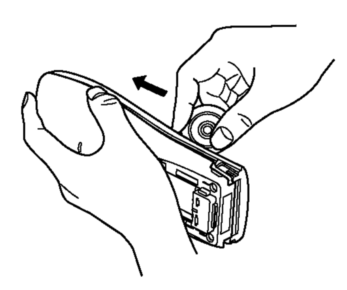


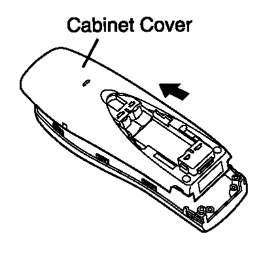
Fig. 5



Insert a JIG (PQDJ10006Y) between the Cabinet Body and the Cabinet Cover, then pull it along the gap to open the Cabinet.



Likewise, open the other side of the Cabinet.



Remove the Cabinet Cover by pushing it upward.

Fig. 4

Shown in Fig.-	To Remove	Remove
3	Cabinet Cover	Screws (2 × 8)..........(B) × 2
4		Follow the procedure.
5	Main P.C. Board	Screw (2 × 8)..............(C) × 3
		Tape and Solders
		Main P.C. Board

5.3. Charger Unit

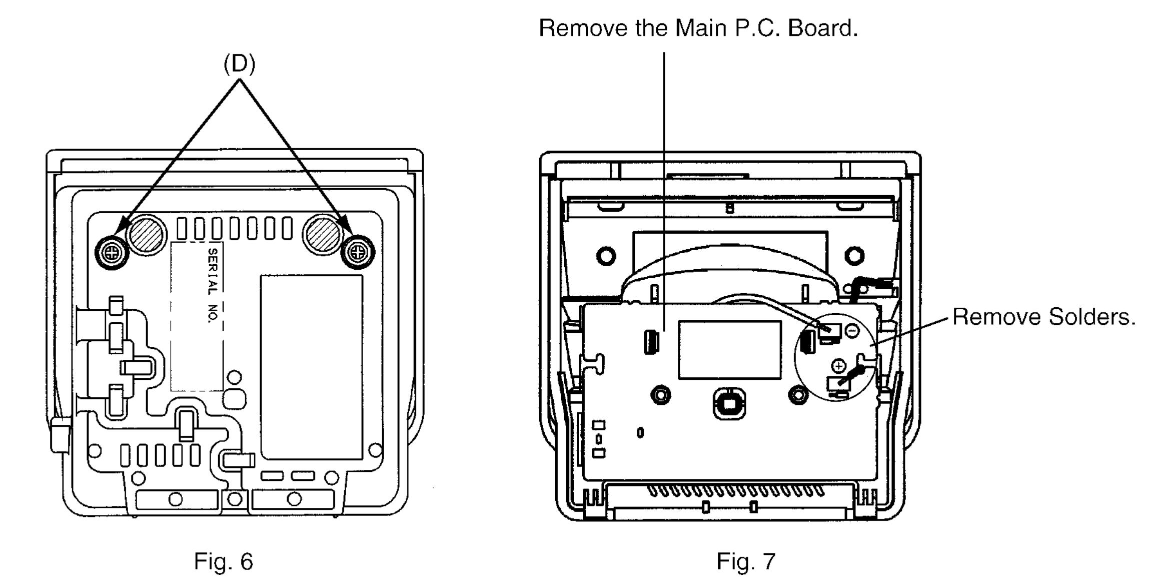


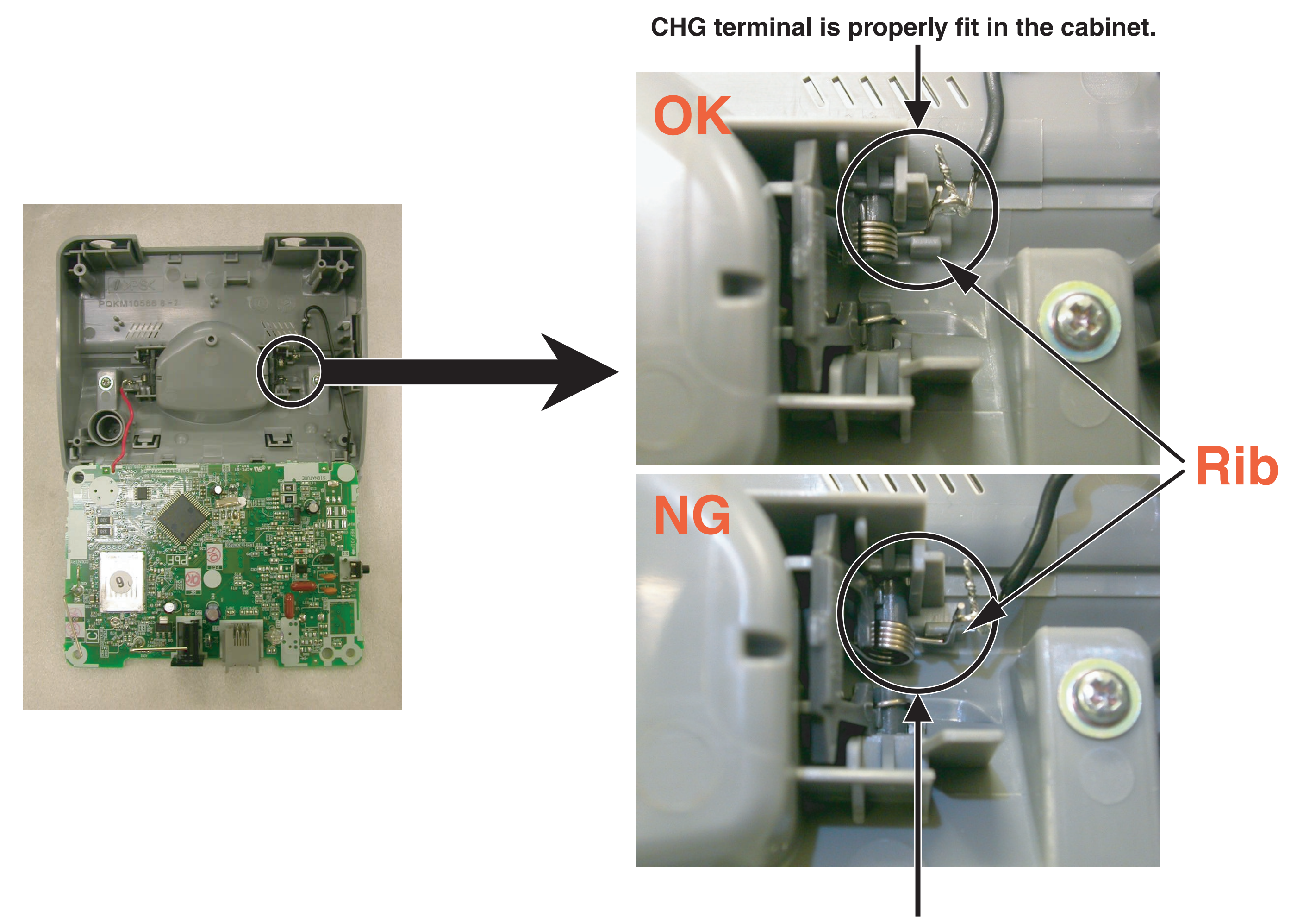
Fig. 6

Fig. 7

Shown in Fig.-	To Remove	Remove
6	Cabinet Cover	Screws (2.6 × 14)..........(D) × 2
7	Main P.C. Board	Solders
		Main P.C. Board

6 ASSEMBLY INSTRUCTIONS

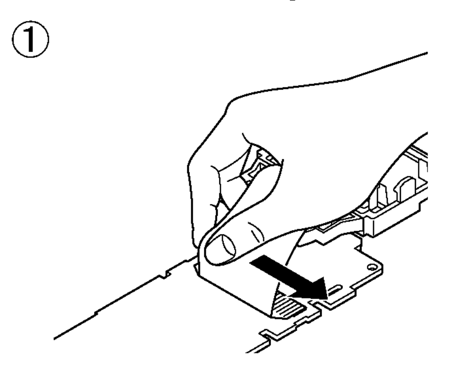
6.1. Warning When Constructing the Base Unit



CHG terminal comes out of rib by pulling black lead wire when opening the cabinet and turning the PCB over. The terminal cannot have enough elastic force, cannot have good contact with handset, and it will result in charge problem.

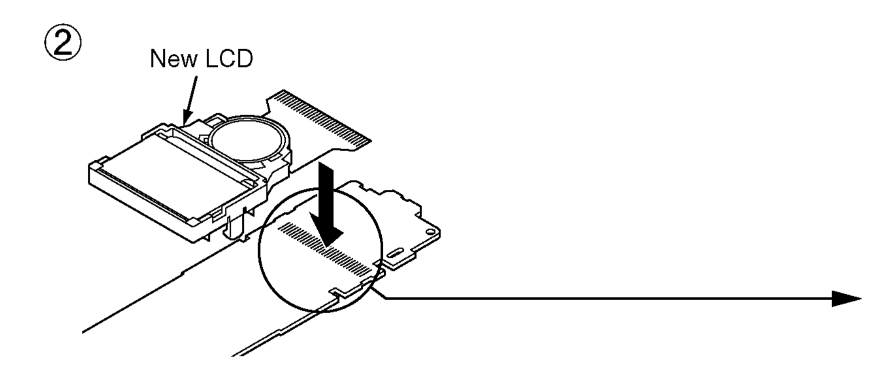
6.2. How to Replace the Handset LCD

①

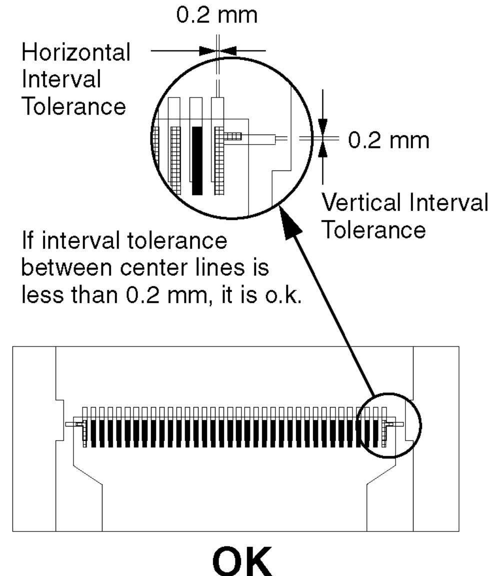


Peel off the FFC (Flexible Flat Cable) of LCD in the direction of the arrow not to damage the foil on the P.C. Board.

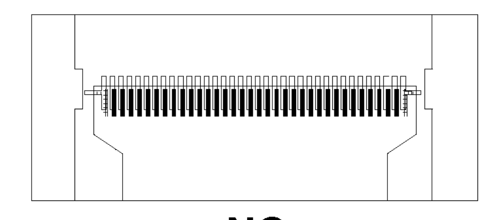
②



Fit the Heatseal of a New LCD to the P.C. Board.



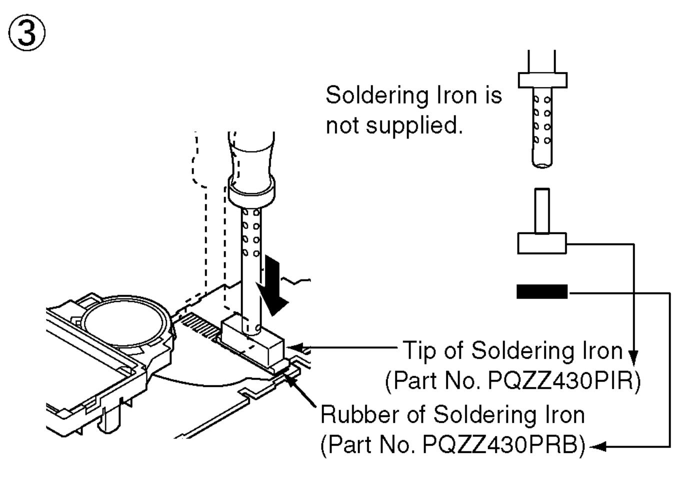
OK



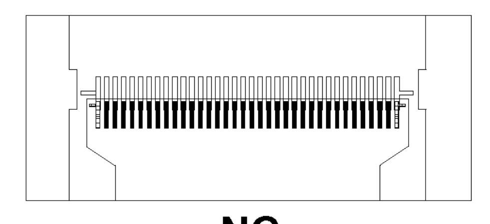
NG

(Horizontal interval tolerance is more than 0.2 mm.)

③

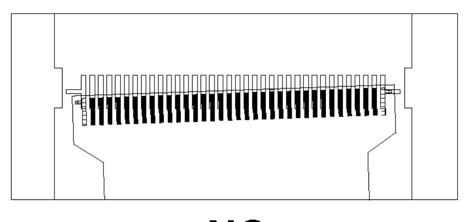


Press the whole heatseal some times with the Tip of Soldering Iron, not to unstick the heatseal, and it should be pressed for 5 to 8 seconds at a time (in case of 60W soldering iron).



NG

(Vertical interval tolerance is more than 0.2 mm.)

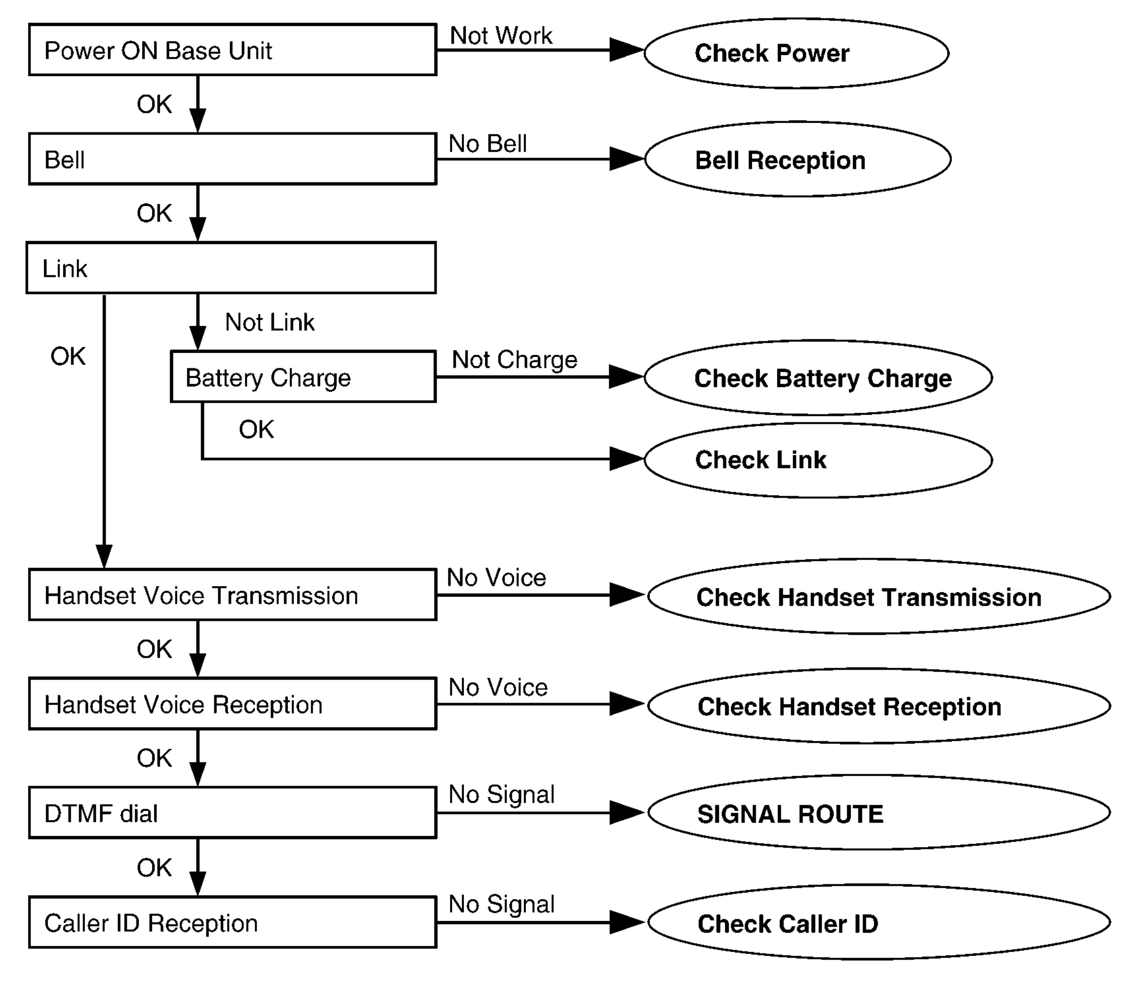


NG

(Inclined)

7 TROUBLESHOOTING GUIDE

Flow Chart



Cross Reference:

Check Power (P.18)

Bell Reception (P.22)

Check Battery Charge (P.19)

Check Link (P.20)

Check Handset Transmission (P.22)

Check Handset Reception (P.22)

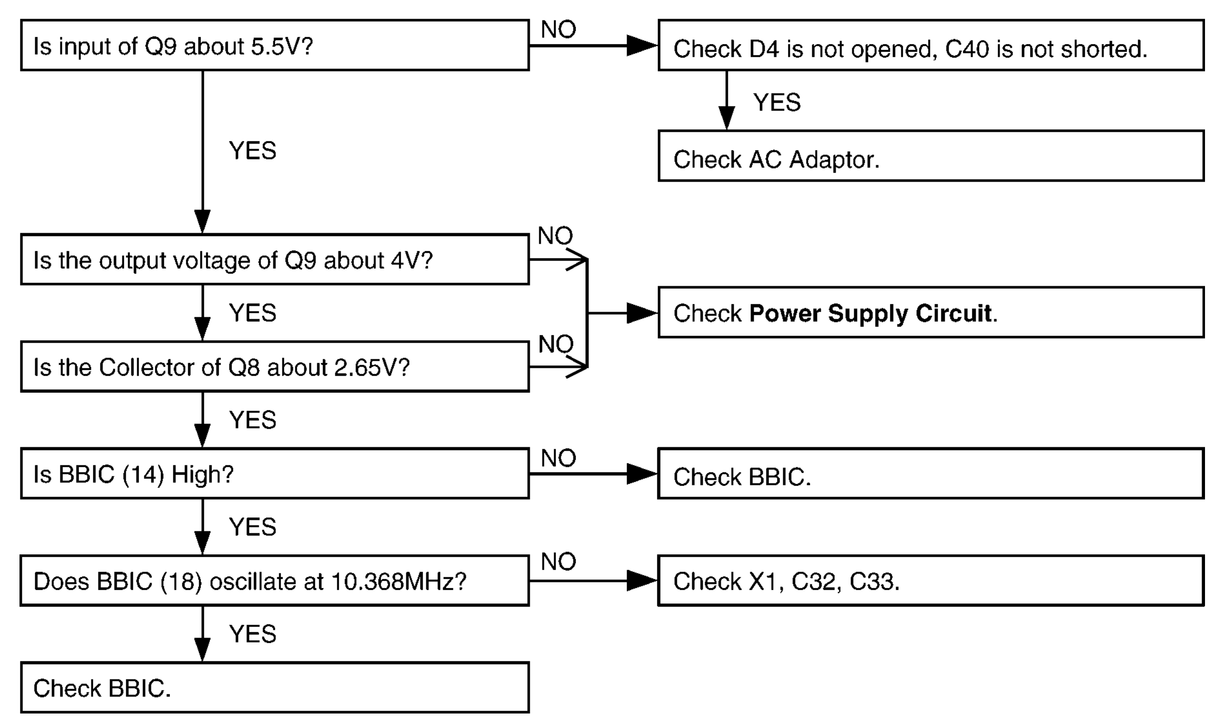
SIGNAL ROUTE (P.49)

Check Caller ID (P.22)

7.1. Check Power

7.1.1. Base Unit

Is the AC Adaptor inserted into AC outlet? (Check AC Adaptor's specification.)



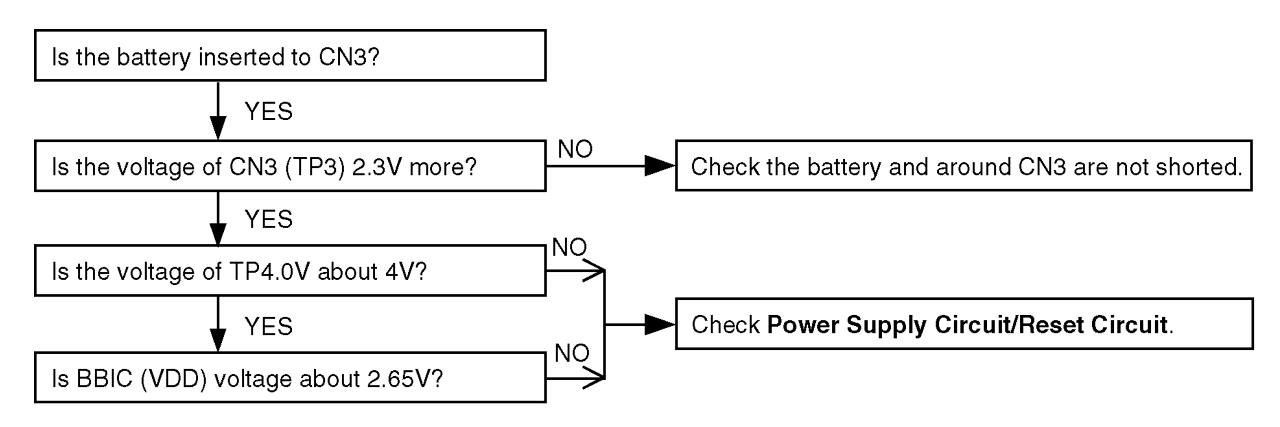
Cross Reference

Power Supply Circuit (P.44)

Note:

BBIC is IC2.

7.1.2. Handset



Cross Reference

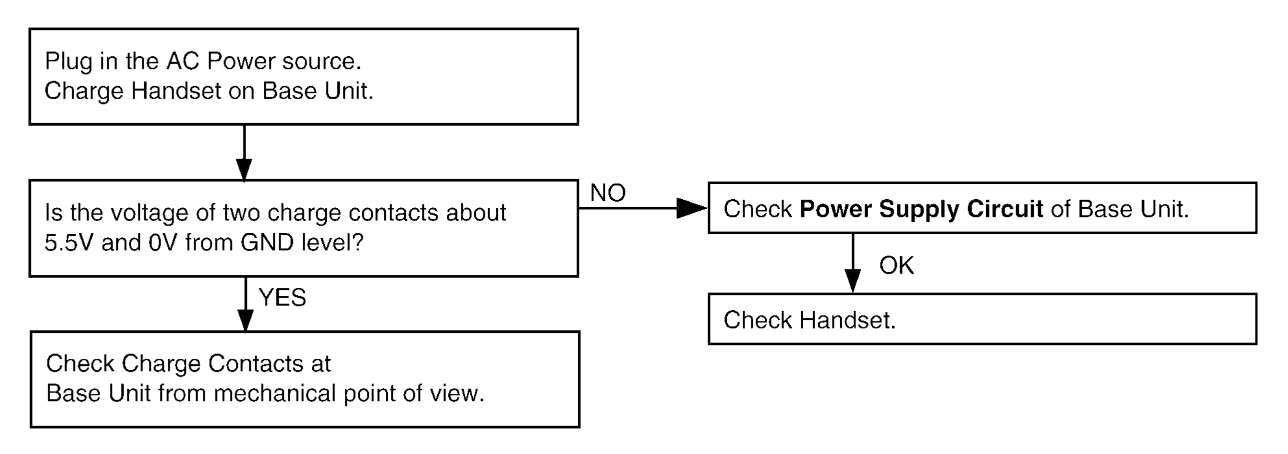
Power Supply Circuit/Reset Circuit (P.47)

Note:

BBIC is IC4.

7.2. Check Battery Charge

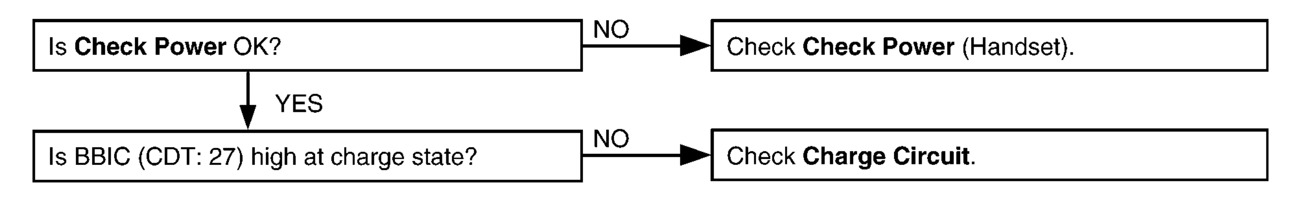
7.2.1. Base Unit



Cross Reference:

Power Supply Circuit (P.44)

7.2.2. Handset



Cross Reference:

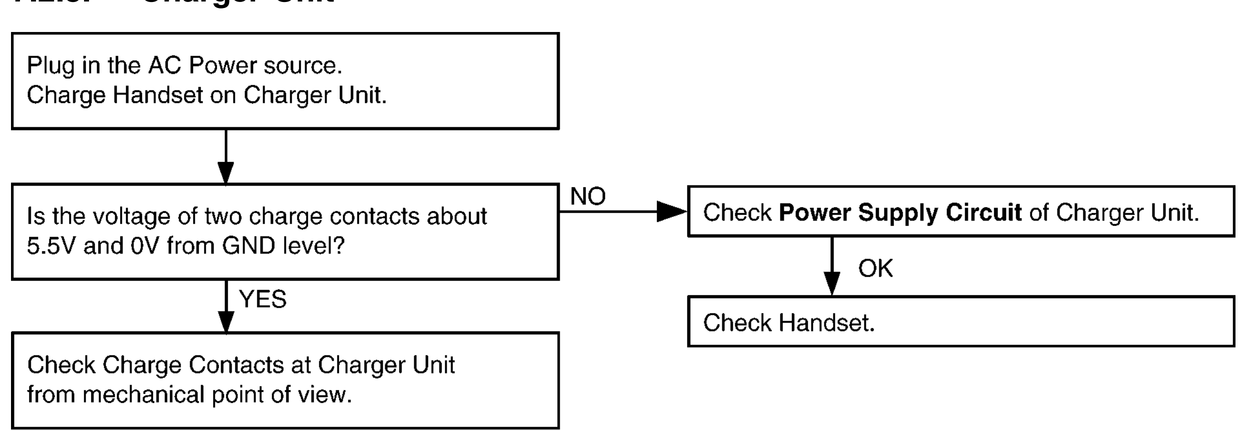
Check Power (P.18)

Charge Circuit (P.47)

Note:

BBIC is IC4.

7.2.3. Charger Unit

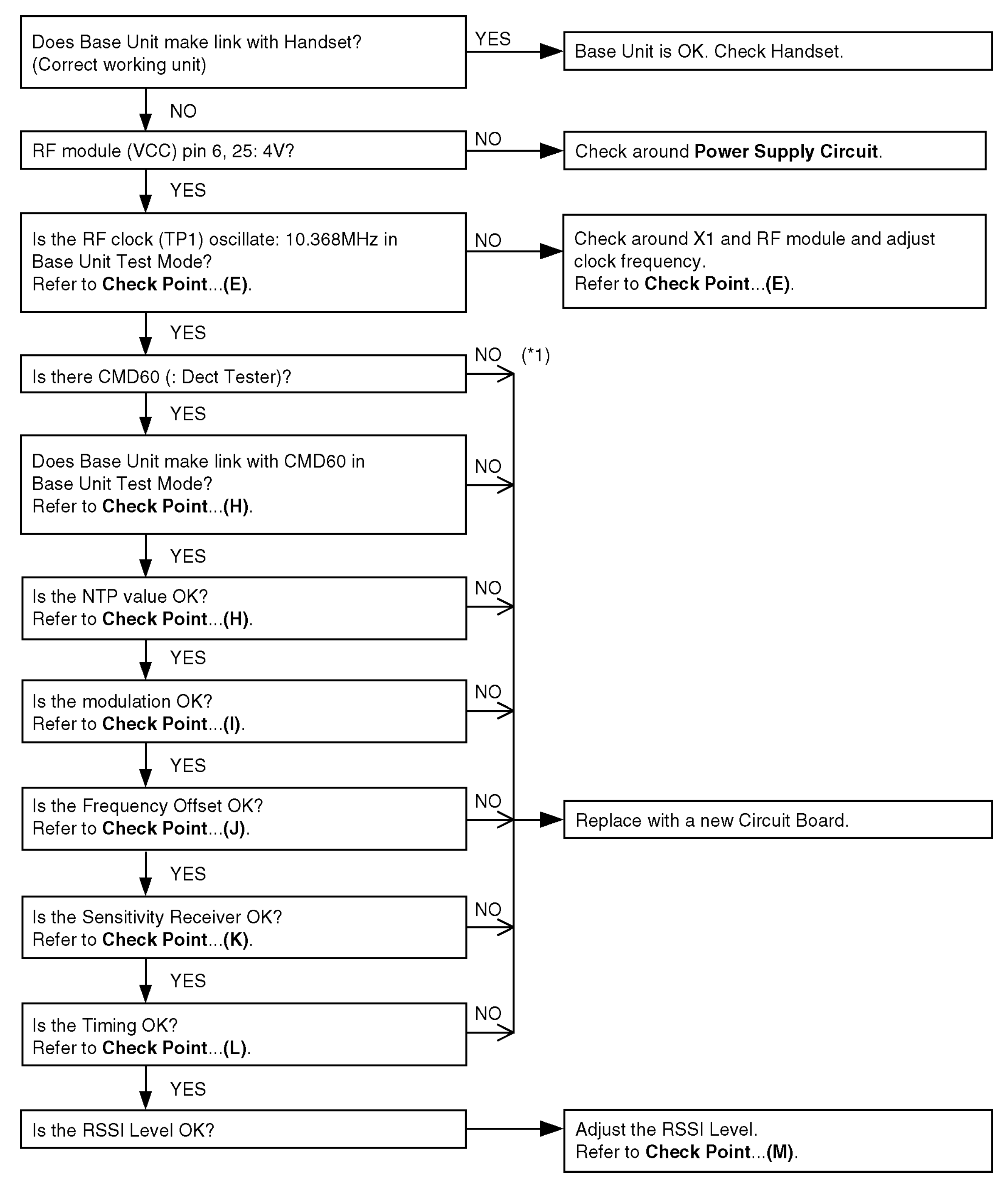


Cross Reference:

Power Supply Circuit (P.48)

7.3. Check Link

7.3.1. Base Unit



Cross Reference:

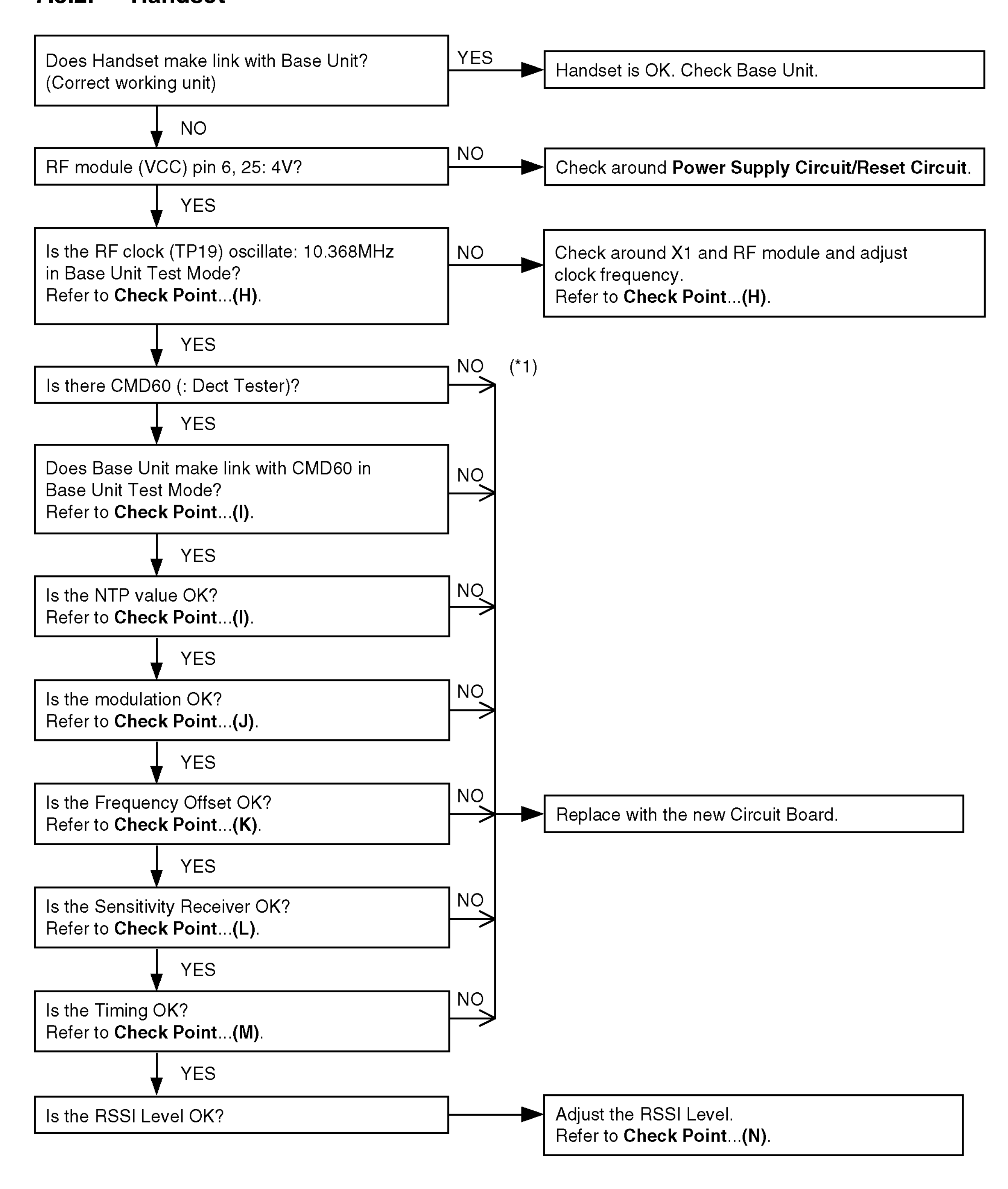
Power Supply Circuit (P.44)

Check Point (Base Unit) (P.23)

Note:

(*1) Refer to **TROUBLESHOOTING BY SYMPTOM (BASE UNIT AND CHARGER UNIT)** (P.23).

7.3.2. Handset



Cross Reference

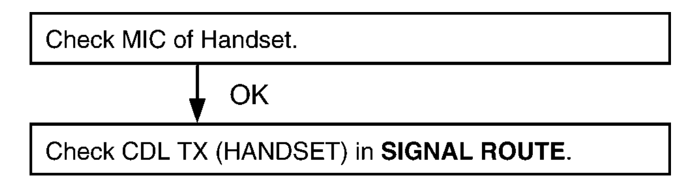
Power Supply Circuit/Reset Circuit (P.47)

Check Point (Handset) (P.33)

Note:

(*1) Refer to **TROUBLESHOOTING BY SYMPTOM (HANDSET)** (P.33).

7.4. Check Handset Transmission



Cross Reference:

SIGNAL ROUTE (P.49)

7.5. Check Handset Reception



Cross Reference:

HOW TO CHECK THE HANDSET SPEAKER (P.40).

SIGNAL ROUTE (P.49)

7.6. Check Caller ID

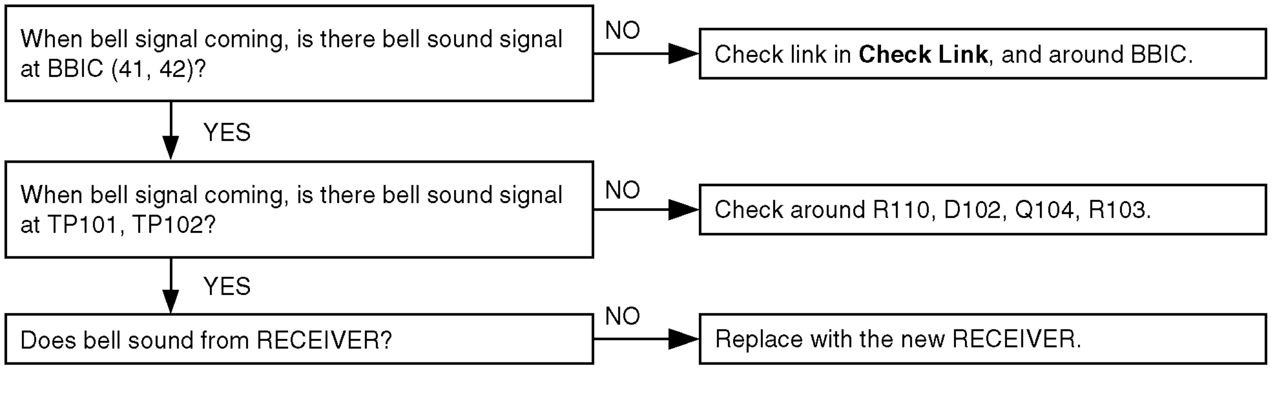
Check Caller ID in **SIGNAL ROUTE**.

Cross Reference:

SIGNAL ROUTE (P.49)

7.7. Bell Reception

7.7.1. Handset



Cross Reference:

Telephone Line Interface (P.45)

Check Link (P.20)

HOW TO CHECK THE HANDSET SPEAKER (P.40)

Note:

BBIC is IC4.

8 TROUBLESHOOTING BY SYMPTOM (BASE UNIT AND CHARGER UNIT)

If your unit has below symptoms, follow the instructions in remedy column. Remedies depend on whether you have DECT tester (*1) or not.

Symptom	Remedy (*2)	
	You don't have DECT Tester.	You have DECT Tester. (Model Number : CMD60)
You cannot dial.	Check item (**A**)-(**F**).	Check item (**A**)-(**F**), (**H**)-(**M**).
You cannot hear the caller's voice.	Check item (**A**)-(**E**).	Check item (**A**)-(**E**), (**H**)-(**J**), (**L**).
You cannot use handset a little away from base unit even if the handset is within range of the base unit.	-	Check item (**H**), (**K**).
The acoustic transmission level is high or low.	Check item (**Q**).	Check item (**O**).
The acoustic reception level is high or low.	Check item (**Q**).	Check item (**N**).
The unit does not link.	Check item (**A**)-(**G**).	Check item (**A**)-(**M**).
The unit cannot charge.	Check item (**P**).	Check item (**P**).

Note:

(*1) A general repair is possible even if you don’t have the DECT tester because it is for confirming the levels, such as Acoustic level in detail.

(*2) Refer to **Check Point (Base Unit)** (P.23)

8.1. Check Point (Base Unit)

Please follow the items below when BBIC or EEPROM is replaced.

Note:

After the measuring, suck up the solder of TP.

*: **PC Setting** (P.28) is required beforehand.

The connections of simulator equipments are as shown in **Adjustment Standard (Base Unit)** (P.30).

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**A**)	2.65V Supply Confirmation	-	1. Confirm that the voltage between TP187 and GND is 2.65V ± 0.2V.	IC2, Q8, C23, C24, C25, C31, C26, C27, C38, R33, R36, D5, C41, R41, R42, Q9, C40, D4, X1, C32, C33, C36, C37
(**B**)	4.0V Supply Confirmation	-	1. Confirm that the voltage between TP91 and GND is 4.0V ± 0.2V.	D4, C40, Q9, R41, R42, C41, D5, C75, C78, C69, C66, C67, C76, IC3
(**C**)	VBACK Status Confirmation	-	1. Confirm that the voltage between J102 and GND is 0V ± 0.4V.	IC2, Q8, C23, C24, C25, C31, C26, C27, C38, R33, R36, D5, C41, R41, R42, Q9, C40, D4, R33, X1, C32, C33

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**D**)*	BBIC Confirmation	-	1. BBIC Confirmation (Execute the command “getchk”). 2. Confirm the returned checksum value. Connection of checksum value and program number is shown below. ex.) checksum value: 4604 / program number: D471ZA	IC2, X1, C32, C33
(**E**)*	BBIC Clock Adjustment (Important)	TP1	1. Execute the command “deactmac”. 2. Execute the command “conttx”. 3. Input Command “rdeeprom 00 00 02”, then you can confirm the current value. 4. Adjust the frequency of TP1 executing the command “setfreq 00 xx (where xx is the value)” so that the reading of the frequency counter is 10.368000MHz ± 10Hz.	IC2, IC3, L1, C48, X1, C32, C33, L5
(**F**)*	Hookswitch Check with DC Characteristics	-	1. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 2. Set line voltage to 48V at on-hook condition and line current to 40mA at off-hook condition of normal telephone. 3. Execute the command “hookoff”. 4. Confirm that the line current is 40mA ± 5mA. 5. Execute the command “hookon”. 6. Confirm that the line current is 0mA + 2mA.	IC2, R7, R8, R9, R10, R77, Q2, Q3, D2, C1, C2
(**G**)*	DTMF Generator Check	-	1. Connect J1 (Telephone Socket) to DTMF tester. 2. Execute the command “hookoff” and “dtmf_up”. 3. Confirm that the high frequency (1477.06Hz) group is -3 ± 2dBm. 4. Execute the command “dtmf_lo”. 5. Confirm that the low frequency (852.05Hz) group is -6 ± 2dBm.	IC2, R32, C22, R23, C80, C14, C13, Q6, R22, R21, R19, R20, C12, D2, C1, C2, R77, D3, R12, Q2, R7, R8, R9, R10, Q3
(**H**)*	Transmitted Power Confirmation	-	Remove the Antenna before starting steps from 1 to 5. 1. Configure the DECT tester (CMD60) as follows; <Setting> • Short TP10 and GND (After the checking, disconnect the wiring between them.) • Test mode: FP • Traffic Channel: 5 • Traffic Slot: 4 • Mode: Loopback • PMID: 00000 2. Execute the command “testmode”. 3. Initiate connection from DECT tester. (“set up connect”) 4. Execute the command “ANT 1”. 5. Confirm that the NTP value at ANT is 20dBm ~ 25dBm.	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**I**)*	Modulation Check and Adjustment	ANT	Follow steps 1 to 3 of **(H)** above. 4. Confirm that the B-Field Modulation is 340kHz/div ~ 402kHz/div using data type Fig31. 5. Adjust the B-Field Modulation if required. (Execute the command “readmod” and “wrtmod xx”, where xx is the value.)	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**J**)*	Frequency Offset Check	-	Follow steps 1 to 3 of **(H)**. 4. Confirm that the frequency offset is -50kHz ~ +50kHz.	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**K**)*	Sensitivity Receiver Confirmation	-	Follow steps 1 to 3 of **(H)**. 4. Set DECT tester power to -88dBm. 5. Confirm that the BER is < 1000ppm.	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**L**)*	Timing Confirmation	-	Follow steps 1 to 3 of **(H)**. 4. Confirm that the Timing accuracy is < ± 2.0ppm.	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**M**)*	RSSI Level Confirmation	-	Follow steps 1 to 3 of **(H)**. 4. Set DECT tester power to -88dBm. 5. Execute the command “readrssi”. 6. Confirm: 25 < returned value < 43 (hex) (34 ± F (hex))	IC2, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**N**)*	Receive Audio Check and Adjustment	ANT J1	1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: FP • Mode: Low • PMID: 00000 2. Execute the command “testmode”. 3. Initiate connection from DECT tester. 4. Execute the command “hookoff”. 5. Execute the command “openau”. 6. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 7. Set line voltage to 48V and line current to 40mA. 8. Connect DECT tester to Tel-simulator. 9. Input audio signal (200mVrms/1kHz tone) to Tel-simulator. <DECT tester setting> • Scramble: On • AF Gen. to ADPCM: Off • AF Meter Input: ADPCM • AF Gen. Frequency: 1000Hz • AF Gen. Level: 200mVrms 10. Confirm hearing tone: 350mVrms ± 100mVrms 11. Adjust audio level if required. (Make sure current value using “getmicgain”. And then execute the command “setmicgain xx”, where xx is the value.) 12. Confirm that the B-field audio distortion with DECT tester is < 5%.	IC2, C21, R31, C20, C11, R18, R16, D3, R12, Q2, R7, R8, Q3, R9, R10, D2, C1, C2, R77, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**O**)*	Transmit Audio Check and Adjustment	ANT J1	1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: FP • Mode: Low • PMID: 00000 2. Execute the command “testmode”. 3. Initiate connection from DECT tester. 4. Execute the command “hookoff”. 5. Execute the command “openau”. 6. Connect J1 (Telephone Socket) to Tel-simulator which is connected with 600 Ω. 7. Set line voltage to 48V and line current to 40mA. 8. Input audio signal (30mVrms/1kHz tone) to DECT tester. <DECT tester setting> • Scramble: On • AF Gen. to ADPCM: On • AF Meter Input: AF Voltm • AF Gen. Frequency: 1000Hz • AF Gen. Level: 30mVrms 9. Confirm hearing tone: 380mVrms ± 100mVrms. 10. Adjust audio level if required. (Make sure current value using “getspkrgain”. And then execute the command “setspkrgain xx”, where xx is the value.) 11. Confirm that the audio distortion at 600R of Tel-simulator is < 5%.	IC2, R32, C22, R23, C80, C14, C13, R22, R21, Q6, R18, R19, R20, C12, D2, C1, C2, R77, R16, D3, R12, Q2, R7, R8, R9, R10, Q3, IC3, L1, C43, C78, C75, C69, C48, C72, C66, C67, C76, C57, C73, L3, DA1, R66, R67, C55, C56, R78, R79, C54, C58, C86, R38
(**P**)	Charging Check	-	1. Connect Charge Contact 12Ω/2W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 2.3V ± 0.2V.	D4, R43, R44

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**Q**)*	Audio Check	-	1. Link with Handset. 2. Set line voltage to 48V and line current to 40mA. 3. Input -45dBm/1kHz to MIC of Handset. Measure the Level at Line I/F and distortion level. 4. Confirm that the level is -7.5 ± 2dBm and that the distortion level is < 5% at TEL Line (600Ω Load). 5. Input -20dBm/1kHz to Line I/F. Measure the level at Receiver of Handset and distortion level (*Receive volume set to second position from minimum). 6. Confirm that the level is -23 ± 2dBm and that the distortion level is < 5% at Receiver (vol = Low, 150Ω Load).	

8.2. The Setting Method of JIG (Base Unit)

8.2.1. Preparation

8.2.1.1. Equipment Required

- DECT tester: Rohde & Schwarz, CMD 60 is recommended.
- Frequency counter: it must be precise to be able to measure 1Hz (precision; ±4ppm).
  Hewlett Packard, 53131A is recommended.
- DC power: it must be able to output at least 1A current under 9V.
- Digital multi-meter (DMM): it must be able to measure voltage and current.
- Oscilloscope

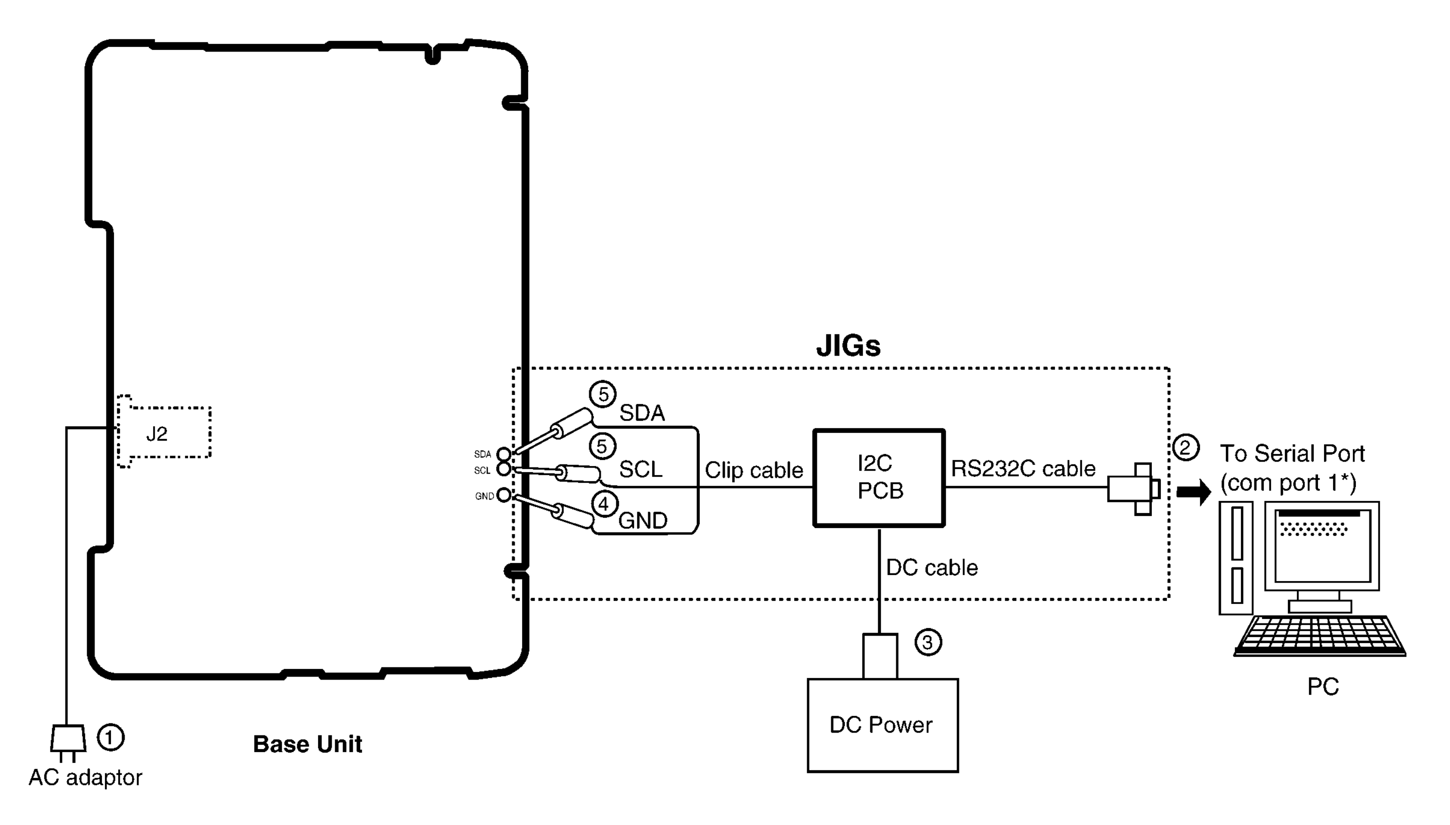
8.2.1.2. JIGs and PC

- EEPROM serial JIGs
  1. I2C PCB: PQZZTCD420BX
  2. RS232C cable: PQZZ1CD705BX
  3. Clip cable: PQZZ2CD705BX
  4. DC cable: PQZZ3CD705BX
- PC which runs in DOS mode
- **Batch file CD-ROM** for setting: PQZZTG1105RU

8.2.2. PC Setting

8.2.2.1. Connections

①Connect the AC adaptor to J2 (base unit).
②Connect the RS232C cable to the Serial Port of PC.
③Connect the DC cable to the DC Power.
④Connect the Clip cable GND.
⑤Connect the Clip cable SCL and SDA.



Note:

*: Com port names may vary depending on what your PC calls it.

8.2.2.2. PC Setting

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PQZZTG***** folder to your PC (example: D drive).

2. Open a window of MS-DOS mode.

<Example for Windows>

On your computer, click **[Start]**, select **Programs** (**All Programs** for Windows XP/Windows Server 2003), then click
MS-DOS Prompt. (for Windows 95/Windows 98)
Or
Accessories-MS-DOS Prompt. (for Windows Me)
Or
Command Prompt. (for Windows NT 4.0)
Or
Accessories-Command Prompt.
(for Windows 2000/Windows XP/Windows Server 2003)

3. At the DOS prompt, type "**D:**" (for example) to select the drive, then press the **Enter** key.

4. Type "**CD ¥PQZZTG*****", then press the **Enter** key.

5. Type "**SET RTX_COM=X**", then press the **Enter** key (**X**: COM port number used for the serial connection on your PC).

6. Type "**READID**", then press the **Enter** key.
   - If any error messages appear, change the port number or check the cable connection.
   - If any value appear, go to next step.

7. Type "**DOSKEY**", then press the **Enter** key.

<Example: correct setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG*****
D: ¥PQZZTG***** >SET RTX_COM=X
D: ¥PQZZTG*****>READID
00 52 4F A8 A8
D: ¥PQZZTG*****>DOSKEY
D: ¥PQZZTG*****> _
```

<Example: incorrect setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG*****
D: ¥PQZZTG***** >SET RTX_COM=X
D: ¥PQZZTG*****>READID
  CreateFile error
ERROR 10: Can't open serial port
D: ¥PQZZTG*****> _
```

Note:

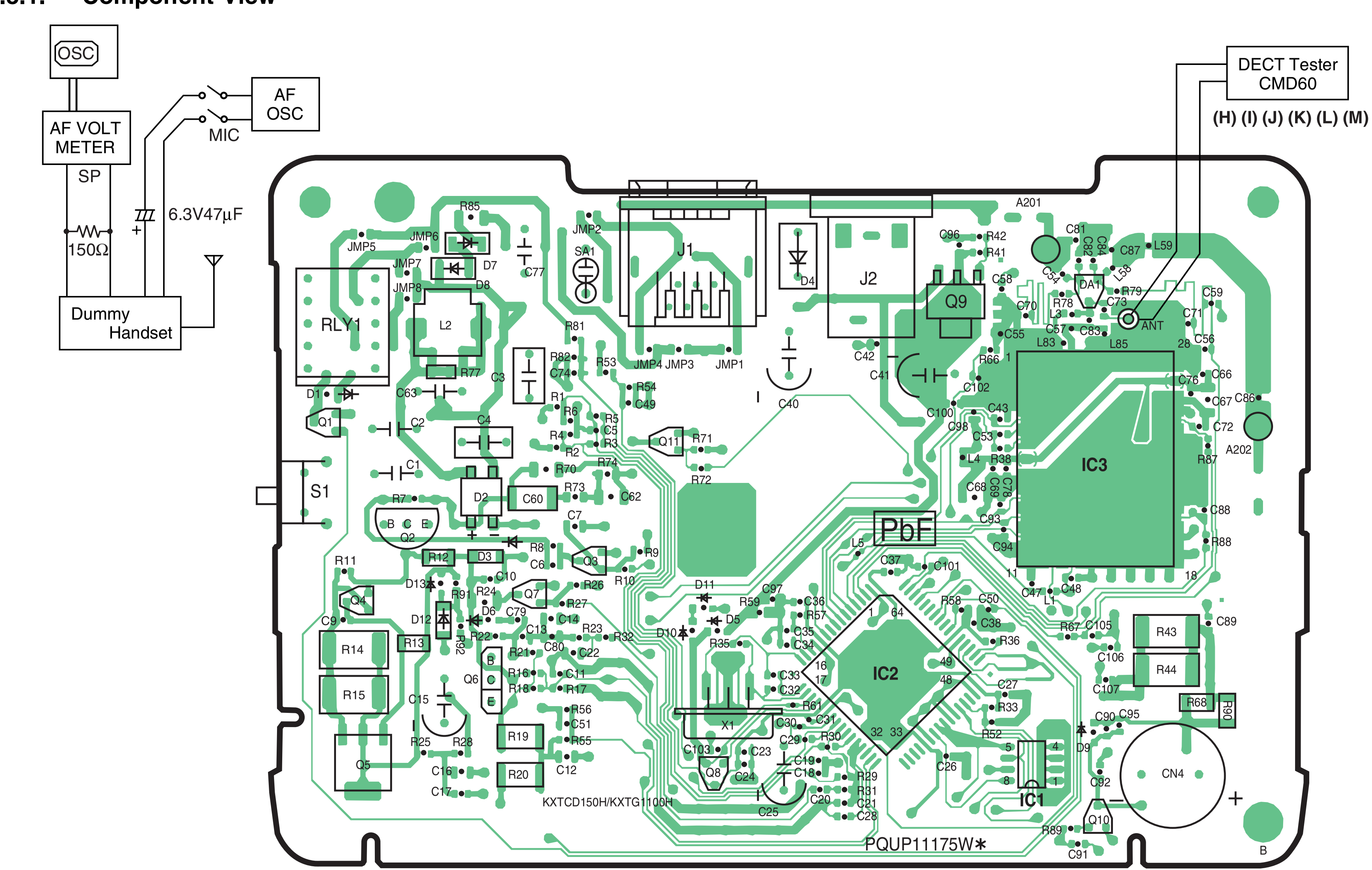
- "******" varies depending on the country.
- See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	adjust Frequency of RFIC	Type "setfreq nn nn".
hookoff	off-hook mode on Base	Type "hookoff".
hookon	on-hook mode on Base	Type "hookon".
Getchk	Read checksum	Type "getchk".
Wreeprom	write eeprom	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.
InitBsPIN.bat	Initial Base PIN to "0000"	Type "initBsPIN"

8.3. Adjustment Standard (Base Unit)

When connecting the Simulator Equipments for checking, please refer to below.

8.3.1. Component View



Note:

(**H**) - (**M**) is referred to **Check Point (Base Unit)** (P.23)

8.3.2. Flow Solder Side View

Note:

(**A**) - (**P**) is referred to **Check Point (Base Unit)** (P.23)

(*1) Refer to **Connections** (P.28)

8.4. Check Point (Charger Unit)

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**A**)	Charging Check	-	1. Connect Charge Contact 12Ω/2W resistor between charge+ and charge-. 2. Measure and confirm voltage across the resistor is 2.7V ± 0.2V.	D1, R1, R2

Note:

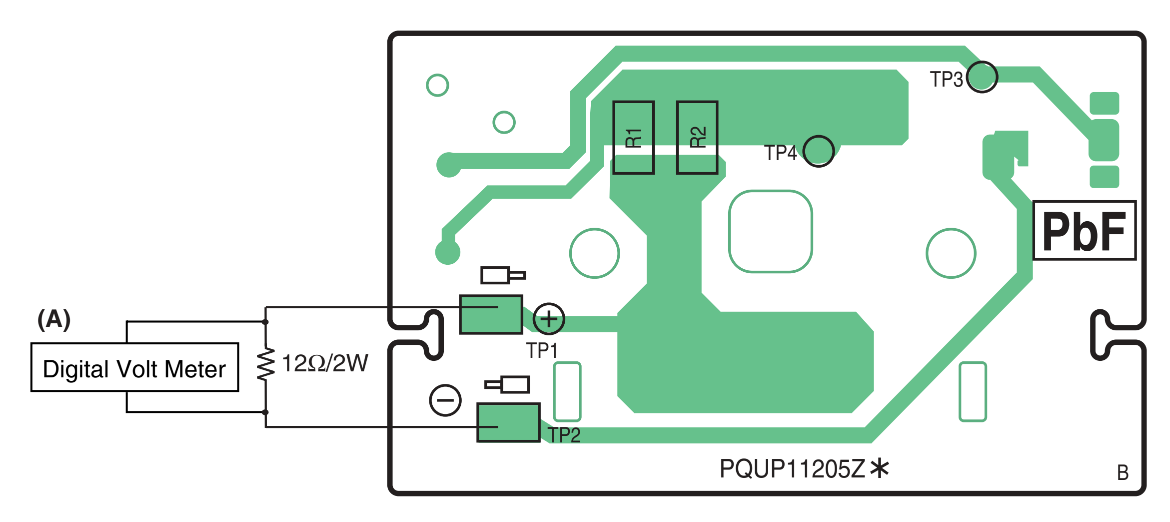
After the measuring, suck up the solder of TP.

The connection of adjustment equipment are as shown in **Adjustment Standard (Charger Unit)** (P.32).

8.5. Adjustment Standard (Charger Unit)

When connecting the Simulator Equipments for checking, please refer to below.

8.5.1. Flow Solder Side View



Note:

(**A**) is referred to **Check Point (Charger Unit)** (P.32)

9 TROUBLESHOOTING BY SYMPTOM (HANDSET)

If your unit has below symptoms, follow the instructions in remedy column. Remedies depend on whether you have DECT tester (*1) or not.

Symptom	Remedy (*2)	
	You don't have DECT Tester.	You have DECT Tester. (Model Number : CMD60)
Battery strength is not indicated correctly by Battery icon.	Check item (**A**)-(**C**), (**F**)-(**G**).	Check item (**A**)-(**C**), (**F**)-(**G**).
You cannot hear the caller's voice.	Check item (**A**)-(**C**), (**H**).	Check item (**A**)-(**C**), (**H**)-(**K**), (**M**).
You cannot use handset a little away from base unit even if the handset is within range of the base unit.	-	Check item (**I**), (**L**).
Does not link between base unit and handset.	Check item (**A**)-(**C**), (**H**).	Check item (**A**)-(**C**), (**H**)-(**N**).
The Audio level is high or low.	Check item (**Q**).	Check item (**O**),(**P**).

Note:

(*1) A general repair is possible even if you don't have the DECT tester because it is for confirming the levels, such as Acoustic level in detail.

(*2) Refer to **Check Point (Handset)** (P.33)

9.1. Check Point (Handset)

Please follow the items below when BBIC or EEPROM is replaced.

Note:

After the measuring, suck up the solder of TP.

*: **PC Setting** (P.36) is required beforehand.

The connections of simulator equipments are as shown in **Adjustment Standard (Handset)** (P.38).

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**A**)	4.0V Supply Confirmation	-	1. Confirm that the consumption current is < 200mA, that is, there is no short circuit. 2. Confirm that the voltage between TP4V and GND is 4.1V ± 0.2V.	IC4, F1, R21, R4, C1, L2, D1, C15, C33, C34, C14, Q1, R111, R2, C26, X1, C16, C17
(**B**)	VBACK Status Confirmation	-	1. Confirm that the voltage between VBACK and GND is 0V ± 0.4V.	IC4, F1, R21, R4, C1, L2, D1, C15, C33, C34, C14, Q1, R111, R2, C26, X1, C16, C204
(**C**)*	BBIC Confirmation	-	1. BBIC Confirmation (Execute the command "getchk"). 2. Confirm the returned checksum value. Connection of checksum value and program number is shown below. ex.) checksum value: C7AA / program number: D782ZA	IC4, X1, C16, C204
(**D**)	Charge Control Check & Charge Current Monitor Check	-	1. Apply 6V between TP20(+) and TP21(-) with current limit of PSU to 250mA. 2. Confirm that the charge current is ON/OFF. 3. SW to decrease current limit of PSU to 100mA. 4. Confirm that the charge current is stable.	IC4, D2, L4, L5, Q2, Q3, R6, C26, F1, R21, R4, C1
(**E**)*	Charge Detection (OFF) Check	-	1. Stop supplying 6V to TP20(+) and TP21(-). 2. Execute the command "charge". 3. Confirm that the returned value is 00 (hex).	IC4, D2, L4, L5, Q2, Q3, R6, C26, F1, R21, R4, C1

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**F**)*	Battery Monitor Check & Adjustment (Important)	-	1. Apply 2.3V ± 0.005V between TP3(+) and TP4(-) with DC power. 2. Execute the command “deactmac” to stabilize the value. 3. Then, execute the command “readbatt”. The returned value is XX. 4. Confirm that XX is between 98 and A8. 98 < XX < A8 (Hex) (If XX is out of range, change BBIC)	IC4, D2, L4, L5, Q2, Q3, R6, C26, F1, R21, R4, C1
(**G**)	Battery Low Confirmation (Important)	-	1. Apply 2.40V between TP3(+) and TP4(-). 2. Confirm that there is no Speaker sound (Battery low alarm). 3. Apply 2.20V between TP3(+) and TP4(-). 4. Confirm that there is Speaker sound (Battery low alarm).	IC4, F1, R21, R4, C1, R103, R110, D102, Q104, BUZZER
(**H**)*	BBIC Clock Adjustment (Important)	TP19	1. Apply 2.6V between TP 3(+) and TP 4(-) with DC power. 2. Execute the command “deactmac”. 3. Execute the command “conttx”. 4. Input Command “rdeeprom 00 01 01", then you can confirm the current value. 5. Adjust the frequency of TP19 executing the command “setfreq 00 xx (where xx is the value)” so that the reading of the frequency counter is 10.368000MHz ± 10Hz.	IC4, L3, C57, IC3, X1, C16, C204
(**I**)*	Transmitted Power Confirmation	TP15	Remove the Antenna before starting steps from 1 to 5. 1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: PP • RFPI: 0102030405 • Traffic Channel: 5 • Traffic Slot: 4 • Mode: Loopback 2. Execute the command “testmode”. 3. Execute the command “regcmd60”. 4. Initiate connection from DECT tester. 5. Confirm that the NTP value at A201 (TP15) is 20dBm ~ 25dBm.	IC4, IC3, C54, L3, C57, R112, R18, C61, C58
(**J**)*	Modulation Check and Adjustment	TP15	Follow steps 1 to 4 of **(I)** above. 5. Confirm that the B-Field Modulation is 340kHz/div ~ 402kHz/div using data type Fig31. 6. Adjust the B-Field Modulation if required. (Execute the command “Readmod” and “Writemod xx”, where xx is the value.)	IC4, IC3, C54, L3, C57, R112, R18, C61, C58
(**K**)*	Frequency Offset Confirmation	-	Follow steps 1 to 4 of **(I)** above. 5. Confirm that the frequency offset is -50kHz ~ +50kHz.	IC4, IC3, C54, L3, C57, R112, R18, C61, C58
(**L**)*	Sensitivity Receiver Confirmation	-	Follow steps 1 to 4 of **(I)** above. 5. Set DECT tester power to -88dBm. 6. Confirm that the BER is < 1000ppm.	IC4, IC3, C54, L3, C57, R112, R18, C61, C58
(**M**)*	Timing Confirmation	-	Follow steps 1 to 4 of **(I)** above. 5. Confirm that the Timing accuracy is < ± 2.0ppm.	IC4, IC3, C54, L3, C57, R112, R18, C61, C58
(**N**)*	RSSI Level Confirmation	-	Follow steps 1 to 4 of **(I)** above. 5. Set DECT tester power to -88dBm. 6. Execute the command “readrssi”. 7. Confirm: 25 < returned value < 43 (hex) (34 ± F (hex))	IC4, IC3, C54, L3, C57, R112, R18, C61, C58

	Items	Adjustment Point	Procedure	Check or Replace Parts
(**O**)*	Receive Audio Check and Confirmation	TP15	1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: PP • Mode: Normal • RFPI: 0102030405 2. Execute the command "testmode". 3. Execute the command "regcmd60". 4. Initiate connection from DECT tester. 5. Execute the command "openaudio". 6. Confirm that the value of EEPROM address "F3F" is "02". (If the value is not "02 (by User)", set "02" and power off and power on, and return to clause 2.) 7. Input audio signal (50mVrms/1kHz tone) from DECT tester. <DECT tester setting> • Scramble: On • AF Gen. to ADPCM: On • AF Meter Input: AF Voltm • AF Gen. Frequency: 1000Hz • AF Gen. Level: 50mVrms 8. Confirm hearing tone: 70mVrms ± 30mVrms (Just check Audio path) 9. Confirm that the audio distortion with DECT tester is < 5%.	IC4, C67, C68, D7, D6, IC3, C54, L3, C57, R112, R18, C61, C58
(**P**)*	Transmit Audio Check and Confirmation	TP15	1. Configure the DECT tester (CMD60) as follows; <Setting> • Test mode: FP • Mode: Normal • RFPI: 0102030405 2. Execute the command "testmode". 3. Execute the command "regcmd60". 4. Initiate connection from DECT tester. 5. Execute the command "openaudio". 6. Confirm that the value of EEPROM address "F3F" is "02". (If the value is not "02 (by User)", set "02" and power off and power on, and return to clause 2.) 7. Input audio signal (30mVrms/1kHz tone) to DECT tester. <DECT tester setting> • Scramble: On • AF Gen. to ADPCM: Off • AF Meter Input: ADPCM • AF Gen. Frequency: 1000Hz • AF Gen. Level: 30mVrms 8. Confirm hearing tone: 530mVrms ± 100mVrms (Just check Audio path) 9. Confirm that the audio distortion with DECT tester is < 5%.	IC4, C8, R7, R8, C6, C7, C5, R5, R1, C4, IC3, C54, L3, C57, R112, R18, C61, C58
(**Q**)	Audio Check and Confirmation	-	1. Link to BASE which is connected to Line Simulator. 2. Set line voltage to 48V and line current to 40mA. 3. Input -45dBm/1KHz to MIC and measure Line output level. 4. Confirm that the level is -7.5 ± 2dBm and that the distortion level is < 5% at TEL Line (600Ω Load). 5. Input -20dBm/1KHz to Line I/F and measure Receiving level at SP+ and SP-. 6. Confirm that the level is -23 ± 2dBm and that the distortion level is < 5% at Receiver. (vol = Low, 150Ω Load)	

9.2. The Setting Method of JIG (Handset)

9.2.1. Preparation

9.2.1.1. Equipment Required

- DECT tester: Rohde & Schwarz, CMD 60 is recommended.
- Frequency counter: it must be precise to be able to measure 1Hz (precision; ± 4ppm).
  Hewlett Packard, 53131A is recommended.
- DC power: it must be able to output at least 1A current under 2.4V for Handset, 9V for JIG.
- Digital multi-meter (DMM): it must be able to measure voltage and current.
- Oscilloscope

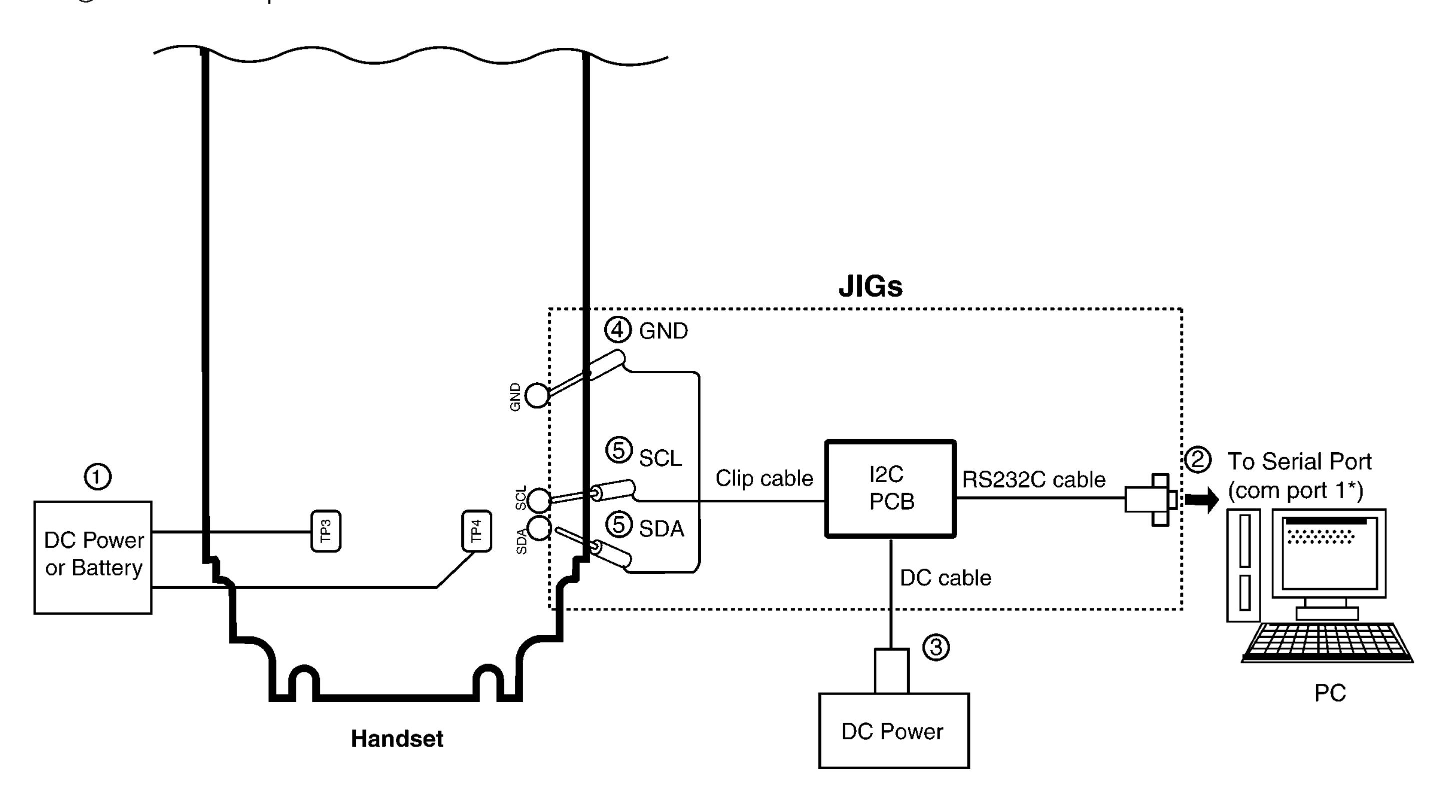
9.2.1.2. JIGs and PC

- EEPROM serial JIGs
  1. I2C PCB: PQZZTCD420BX
  2. RS232C cable: PQZZ1CD705BX
  3. Clip cable: PQZZ2CD705BX
  4. DC cable: PQZZ3CD705BX
- PC which runs in DOS mode.
- **Batch file CD-ROM** for setting: PQZZTG1105RU

9.2.2. PC Setting

9.2.2.1. Connections

①Connect the DC Power or Battery to TP3 and TP4 (Handset).
②Connect the RS232C cable to the Serial Port of PC.
③Connect the DC cable to the DC Power.
④Connect the Clip cable GND.
⑤Connect the Clip cable SCL and SDA.



Note:

*: Com port names may vary depending on what your PC calls it.

9.2.2.2. PC Setting

1. Insert the Batch file CD-ROM into CD-ROM drive and copy PQZZTG***** folder to your PC (example: D drive).
2. Open a window of MS-DOS mode.

<Example for Windows>

On your computer, click **[Start]**, select **Programs** (**All Programs** for Windows XP/Windows Server 2003), then click
MS-DOS Prompt. (for Windows 95/Windows 98)
Or
Accessories-MS-DOS Prompt. (for Windows Me)
Or
Command Prompt. (for Windows NT 4.0)
Or
Accessories-Command Prompt.
(for Windows 2000/Windows XP/Windows Server 2003)

3. At the DOS prompt, type "**D:**" (for example) to select the drive, then press the **Enter** key.
4. Type "**CD ¥PQZZTG*****", then press the **Enter** key.
5. Type "**SET RTX_COM=X**", then press the **Enter** key (**X**: COM port number used for the serial connection on your PC).
6. Type "**READID**", then press the **Enter** key.
   - If any error messages appear, change the port number or check the cable connection.
   - If any value appear, go to next step.
7. Type "**DOSKEY**", then press the **Enter** key.

<Example: correct setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG*****
D: ¥PQZZTG***** >SET RTX_COM=X
D: ¥PQZZTG*****>READID
00 52 4F A8 A8
D: ¥PQZZTG*****>DOSKEY
D: ¥PQZZTG*****> _
```

<Example: incorrect setting>

```
C: ¥Documents and Settings>D:
D: ¥>CD ¥PQZZTG*****
D: ¥PQZZTG***** >SET RTX_COM=X
D: ¥PQZZTG*****>READID
  CreateFile error
ERROR 10: Can't open serial port
D: ¥PQZZTG*****> _
```

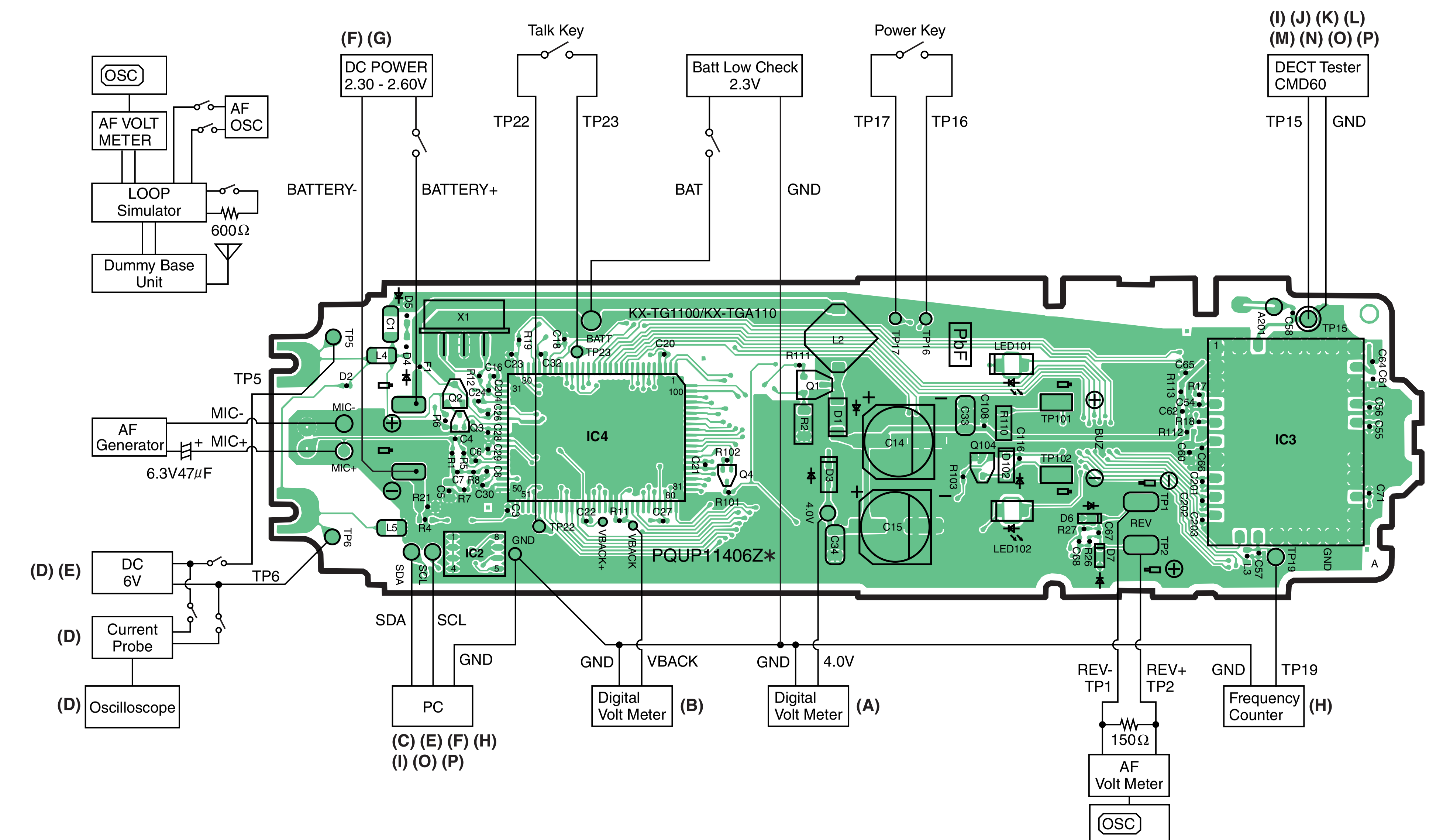
Note:

- "******" varies depending on the country.
- See the table below for frequently used commands.

Command name	Function	Example
rdeeprom	Read the data of EEPROM	Type "rdeeprom 00 00 FF", and the data from address "00 00" to "FF" is read out.
readid	Read ID (RFPI)	Type "readid", and the registered ID is read out.
writeid	Write ID (RFPI)	Type "writeid 00 18 E0 0E 98", and the ID "0018 E0 0E 98" is written.
setfreq	adjust Frequency of RFIC	Type "setfreq nn nn".
Getchk	Read checksum	Type "getchk".
Wreeprom	write eeprom	Type "wreeprom 01 23 45". "01 23" is address and "45" is data to be written.

9.3. Adjustment Standard (Handset)

When connecting the Simulator Equipments for checking, please refer to below.



Note:

(**A**) - (**P**) is referred to **Check Point (Handset)** (P.33)

(*1) Refer to **Connections** (P.36)

10 THINGS TO DO AFTER REPLACING IC

Cautions:

Since this page is common to each country, it may not apply to some models in your country. The contents below are the minimum adjustments required for operation.

10.1. Base Unit

Before doing the following adjustment, be sure to do **PC Setting** (P.28) in **The Setting Method of JIG (Base Unit)**.

IC		Necessary Adjustment
BBIC	Programs for Voice processing, interface for RF and EEPROM	1. Clock adjustment: Refer to Check Point (E). (*1)
EEPROM	Adjustment parameter data (country version batch file, default batch file, etc.)	1. Default batch file: Execute the command “Default4KB”. 2. Country version batch file: Execute the command “1100XXvYY”. (*2) 3. Clock adjustment: Refer to Check Point (E). (*1)

Note:

(*1) Refer to **Check Point (Base Unit)** (P.23)

(*2) XX: country code, YY: revision number

“XX” and “YY” vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIGs and PC** (P.28).

10.2. Handset

Before doing the following adjustment, be sure to do **PC Setting** (P.36) in **The Setting Method of JIG (Handset)**.

IC		Necessary Adjustment
BBIC	Programs for Voice processing, interface for RF and EEPROM	1. Clock adjustment: Refer to Check Point (H). (*3) 2. 4.0 V setting and battery low detection: Refer to Check Point (A), (F) and (G). (*3)
EEPROM	Adjustment parameter data (country version batch file, default batch file, etc.)	1. Default batch file: Execute the command “Default”. 2. Melody Initialize batch file; Execute the Command “D45MFA”. 3. Country version batch file: Execute the command “110XXvYY”. (*4) 4. Clock adjustment: Refer to Check Point (H). (*3) 5. 4.0 V setting and battery low detection: Refer to Check Point (A), (F) and (G). (*3)

Note:

(*3) Refer to **Check Point (Handset)** (P.33)

(*4) XX: country code, YY: revision number

“XX” and “YY” vary depending on the country version. You can find them in the batch file, PQZZ- mentioned in **JIGs and PC** (P.36).

11 RF SPECIFICATION

11.1. Base Unit

Item	Value	Refer to -. *
TX Power	More than 20 dBm ~ 25 dBm	**Check Point (Base Unit) (H)**
Modulation	340 kHz/div ~ 402 kHz/div	**Check Point (Base Unit) (I)**
Frequency Offset	-50 kHz ~ +50 kHz	**Check Point (Base Unit) (J)**
RX Sensitivity	< 1000 ppm	**Check Point (Base Unit) (K)**
Timing Accuracy	< ± 2.0 ppm	**Check Point (Base Unit) (L)**
RSSI Level	34 hex ± F hex	**Check Point (Base Unit) (M)**

*: Refer to **Check Point (Base Unit)** (P.23)

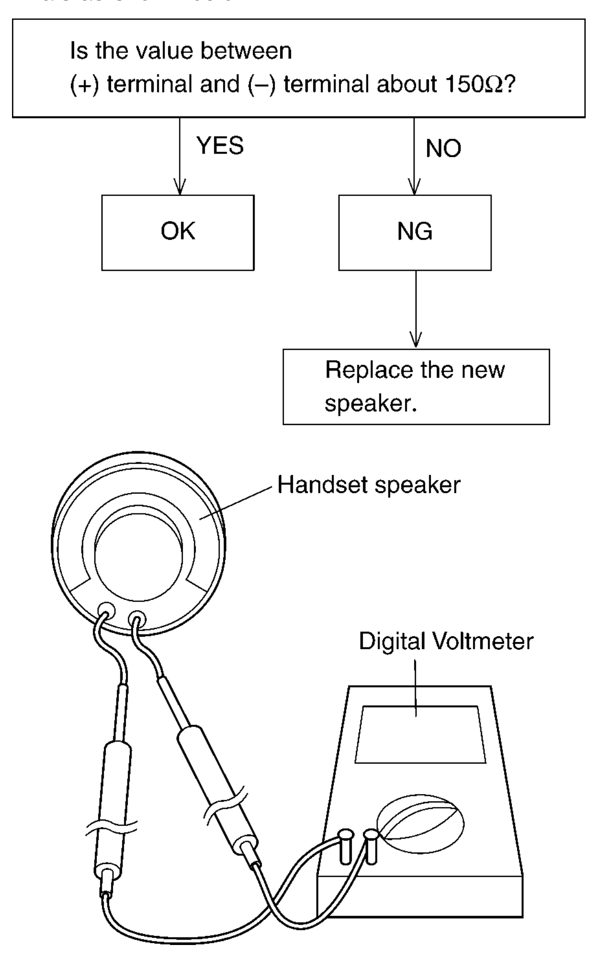
11.2. Handset

Item	Value	Refer to -. **
TX Power	More than 20 dBm ~ 25 dBm	**Check Point (Handset) (I)**
Modulation	340 kHz/div ~ 402 kHz/div	**Check Point (Handset) (J)**
Frequency Offset	-50 kHz ~ +50 kHz	**Check Point (Handset) (K)**
RX Sensitivity	< 1000 ppm	**Check Point (Handset) (L)**
Timing Accuracy	< ± 2.0 ppm	**Check Point (Handset) (M)**
RSSI Level	34 hex ± F hex	**Check Point (Handset) (N)**

: Refer to **Check Point (Handset) (P.33)

12 HOW TO CHECK THE HANDSET SPEAKER

1. Prepare the digital voltmeter, and set the selector knob to ohm meter.
2. Put the probes at the speaker terminals as shown below.



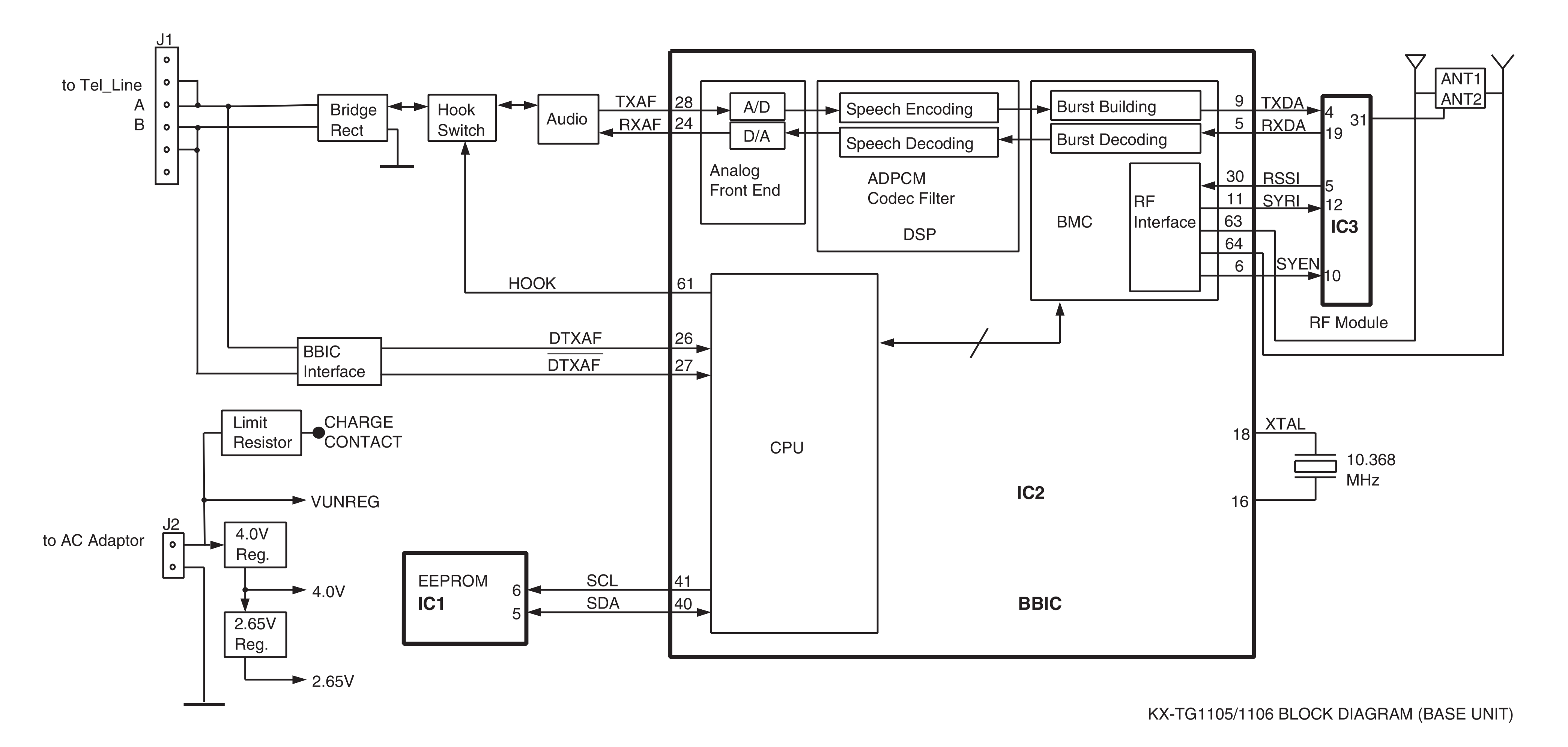
13 FREQUENCY TABLE (MHz)

	BASE UNIT		HANDSET	
Channel No	**Transmit Frequency**	Receive Frequency	**Transmit Frequency**	**Receive Frequency**
1	1897.344	1897.344	1897.344	1897.344
2	1895.616	1895.616	1895.616	1895.616
3	1893.888	1893.888	1893.888	1893.888
4	1892.160	1892.160	1892.160	1892.160
5	1890.432	1890.432	1890.432	1890.432
6	1888.704	1888.704	1888.704	1888.704
7	1886.976	1886.976	1886.976	1886.976
8	1885.248	1885.248	1885.248	1885.248
9	1883.520	1883.520	1883.520	1883.520
10	**1881.792**	**1881.792**	**1881.792**	**1881.792**

Note:

Channel No. 10: In the Test Mode on Base Unit and Handset.

14 BLOCK DIAGRAM (BASE UNIT)



KX-TG1105/1106 BLOCK DIAGRAM (BASE UNIT)

15 CIRCUIT OPERATION (BASE UNIT)

15.1. Outline

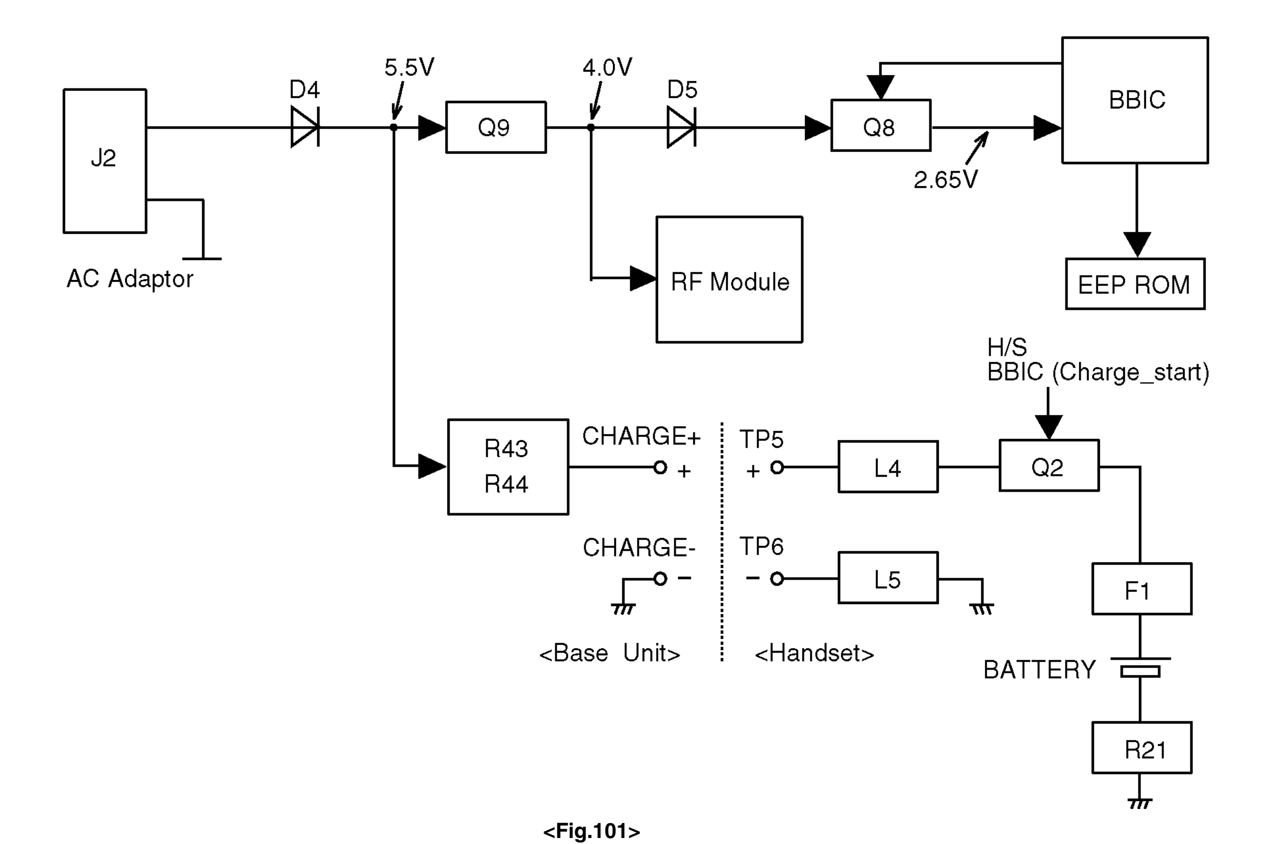
Base Unit consists of the following ICs as shown in **BLOCK DIAGRAM (BASE UNIT)** (P.42).

- DECT BBIC (**B**ase **B**and IC): IC2
  - Handling all the audio, signal and data processing needed in a DECT base unit
  - Controlling the DECT specific physical layer and radio section (**B**urst **M**odule **C**ontroller section)
  - ADPCM codec filter for speech encoding and speech decoding (DSP section)
  - Echo-cancellation and Echo-suppression (DSP section)
  - Any tones (tone, sidetone, ringing tone, etc.) generation (DSP section)
  - DTMF receiver (DSP section)
  - Clock Generation for RF Module
  - ADC, DAC, timer, and power control circuitry
  - All interfaces (ex: RF module, EEPROM, LED, Analog Front End, etc.)
- RF Module: IC3
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - First/Second Mixer
  - Amplifier for transmission and reception
- EEPROM: IC1
  - Temporary operating parameters (for RF, etc.)
- Additionally,
  - Power Supply Circuit (+4.0V, +2.65V output)
  - Crystal Circuit (10.368MHz)
  - Charge Circuit
  - Telephone Line Interface Circuit

15.2. Power Supply Circuit

The power is supplied to the DECT BBIC, RF Module, EEPROM, Relay Coil, LED and Charge Contact from AC Adaptor (+6V) as shown in Fig.101. The power supply is as follows:

- DECT BBIC (IC2): J2 (+6V) → D4 → Q9 → D5 → Q8 → IC2
- RF Module (IC3): J2 (+6V) → D4 → Q9 → IC3
- EEPROM (IC1): J2 (+6V) → D4 → Q9 → D5 → Q8 → IC2 → IC1
- Charge Contact (CHARGE+): J2 (+6V) → D4 → R43, R44 → CHARGE+



<Fig.101>

15.3. Telephone Line Interface

<Function>

- Bell signal detection
- Clip signal detection
- ON/OFF hook circuit
- Audio circuits

Bell & Clip (: Calling Line Identification Presentation: Caller ID) signal detection:

In the standby mode, Q2 is open to cut the DC loop current and decrease the ring load.

When ring voltage appears at the TP3 (A) and TP40 (B) leads (when the telephone rings), the signal is transferred as follows;

- A → C4 → R2 → R29 → IC2 (DLP) [**BELL & CLIP**]
- B → C3 → R1 → R30 → IC2 (DLP) [**BELL & CLIP**]

ON/OFF hook circuit:

In the standby mode, Q2 is open, and connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an **off-hook condition**.

When IC2 detects a ring signal or press the TALK Key onto the handset, Q3 turns on and then Q2 turns on, thus providing an **off-hook condition** (active DC current flow through the circuit) and the following signal flow is for the loop current.

- A → D2 → Q2 → R8 → Q6 → R19 → R20 → D2→ B [**OFF HOOK**]

Audio circuits:

Refer to **SIGNAL ROUTE** (P.49).

15.4. Transmitter/Receiver

Base Unit and Handset mainly consist of RF Module and DECT BBIC.

Base Unit and Handset transmit/receive voice signal and data signal through the antenna on carrier frequency.

Signal Path:

*Refer to **SIGNAL ROUTE** (P.49).

15.4.1. Transmitter Block

The voice signal input from the TEL LINE interface goes to RF Module (IC3) through DECT BBIC (IC2) as shown in **BLOCK DIAGRAM (BASE UNIT)** (P.42)

The voice signal passes through the analog part of IC2 where it is amplified and converted to a digital audio stream signal. The burst switch controller processes this stream performing encryption and scrambling, adding the various other fields to produce the GAP (**G**eneric **A**ccess **P**rofile) standard DECT frame, assigning to a time slot and channel etc.

In IC3, the carrier frequency is changing, and frequency modulated RF signal is generated and amplified, and radiated from antenna. Handset detects the voice signal or data signal in the circuit same as the following explanation of Receiver Block.

15.4.2. Receiver Block

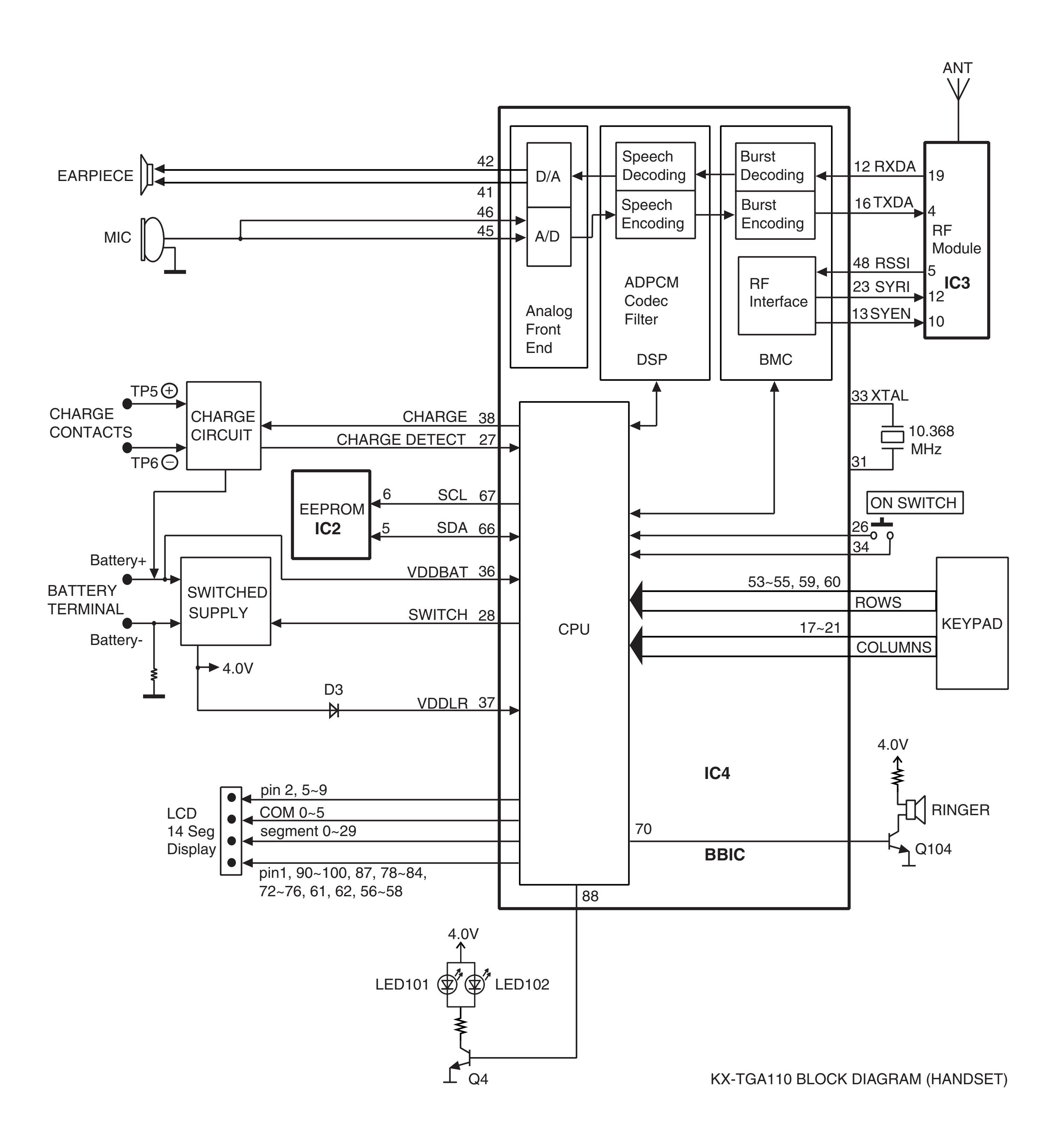
The signal of 1.9 GHz band (1.881792 GHz ~ 1.897344 GHz) which is input from antenna is input to IC3 as shown in **BLOCK DIAGRAM (BASE UNIT)** (P.42).

In IC3, the signal of 1.9 GHz band is demodulated, and goes to IC2 as GAP (**G**eneric **A**ccess **P**rofile) standard DECT frames. It passes through the decoding section burst switch controller where it separates out the frame information and performs de-encryption and de-scrambling as required. It then goes to the DSP section where it is turned back into analog audio. This is amplified by the analog front end, and goes to the TEL LINE Interface.

15.5. Pulse Dialling

During pulse dialing the hookswitch (Q2, Q3) is used to generate the pulses using the HOOK control signal, which is set high during pulses. To force the line impedance low during the “pause” intervals between dial pulses, the PULSE_DIAL signal turns on Q7.

16 BLOCK DIAGRAM (HANDSET)



KX-TGA110 BLOCK DIAGRAM (HANDSET)

17 CIRCUIT OPERATION (HANDSET)

17.1. Outline

Handset consists of the following ICs as shown in **BLOCK DIAGRAM (HANDSET)** (P.46).

- DECT BBIC (**B**ase **B**and IC): IC4
  - All data signals (forming/analyzing ACK or CMD signal)
  - All interfaces (ex: Key, Detector Circuit, Charge, DC/DC Converter, EEPROM, LCD)
- RF Module: IC3
  - PLL Oscillator
  - Detector
  - Compress/Expander
  - Amplifier for transmission and reception
- EEPROM: IC2
  - Temporary operating parameters (for RF, etc.)

17.2. Power Supply Circuit/Reset Circuit

Circuit Operation:

When power on the Handset, the voltage is as follows;

BATTERY (2.2 V ~ 2.6V: TP3) → 4.0V → IC3 (6, 25), D3 → IC4 (37) → IC4 (39, 63) (2.65V)

The Reset signal generates R19, C23 and 2.65V.

17.3. Charge Circuit

Circuit Operation:

When charging the handset on the Base Unit, the charge current is as follows;

DC+ (5.5V ~ 6V) → D4 → R43, R44 → CHARGE+ (Base) → CHARGE+ (Handset) → L4 → Q2→ F1 → BATTERY+... Battery... BATTERY- → R21 → GND → L5 → CHARGE- (Handset)→ CHARGE- (Base) → GND → DC- (GND)

In this way, the BBIC on Handset detects the fact that the battery is charged.

The charge current is controlled by switching Q2 of Handset.

Refer to Fig.101 in **Power Supply Circuit** (P.44).

17.4. Battery Low/Power Down Detector

Circuit Operation:

“Battery Low” and “Power Down” are detected by BBIC which check the voltage from battery.

The detected voltage is as follows;

- Battery Low

  Battery voltage: V (Batt) < 2.3V

  The BBIC detects this level and “” starts flashing and “battery alarm” starts ringing.
- Power Down

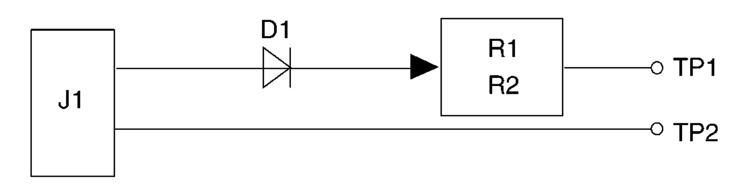
  Battery voltage: V (Batt) < 2.2V

  The BBIC detects this level and power down.

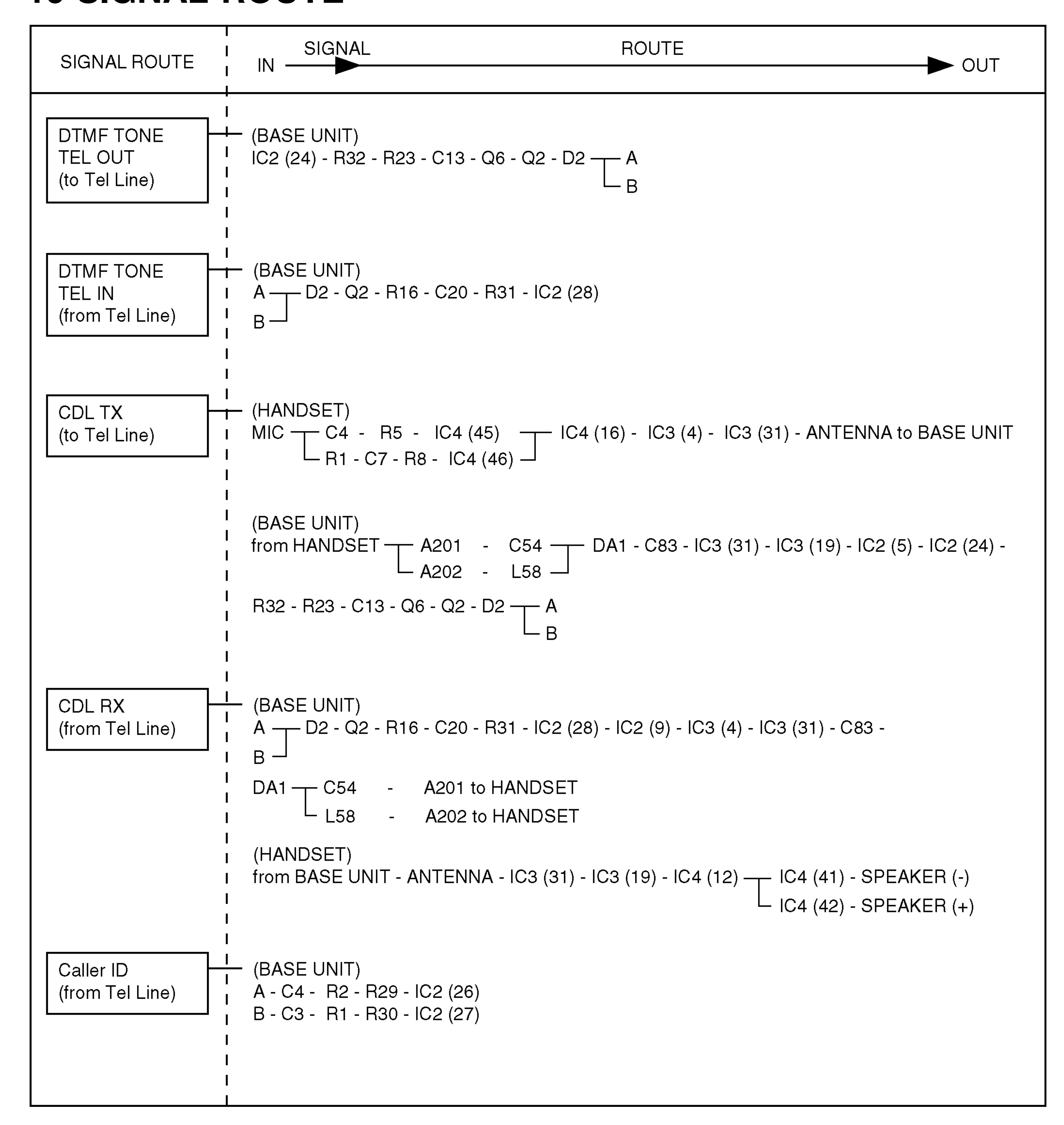
18 CIRCUIT OPERATION (CHARGER UNIT)

18.1. Power Supply Circuit

The power supply is as shown.



19 SIGNAL ROUTE



20 CPU DATA (BASE UNIT)

20.1. IC2 (BBIC)

Pin	Description	I/O	Hi	Hi-z	Low	Remarks
1	VDD	-	-	-	-	-
2	VSS	-	-	-	-	-
3	PA_Driver_Amp	D.O	PA_ON	-	PA_OFF	-
4	TX/RX SW	D.O	TX	-	RX	-
5	RX_Data	D.I	Data	-	Data	-
6	PLL_Strobe	D.O	Latch	-	Normal	-
7	PLL_Data	D.O	-	-	-	-
8	PLL_Clk	D.O	-	-	-	-
9	TX_Data	D.O	-	-	-	-
10	(NO USE)	D.O	-	-	-	-
11	RF_System_Clk	D.O	-	-	-	-
12	VDD	-	-	-	-	-
13	VSS	-	-	-	-	-
14	RESETQ	A.I	Normal	-	Reset	-
15	VDDPM	D.O	-	-	-	-
16	VSSO	D.I	-	-	-	-
17	LOAD	A.I	-	-	-	-
18	XTAL	A.I	-	-	-	10.368 MHz
19	VDDLR	A.I	-	-	-	-
20	LRB	A.I	-	-	-	-
21	VDDA	-	-	-	-	-
22	VSSA	-	-	-	-	-
23	Audio_Out_N	A.O	-	-	-	-
24	Audio_Out_P	A.O	-	-	-	-
25	Bandgap_Ref	A.I	-	-	-	-
26	Differential_Line_P	A.I	-	-	-	for Bell Clip
27	Differential_Line_N	A.I	-	-	-	for Bell Clip
28	Audio_In_N	A.I	-	-	-	-
29	ADC_Ref	A.I	-	-	-	-
30	RSSI	A.I	-	-	-	-
31	AD2(MPCINP)	A.I	-	-	-	for Polarity
32	AD3	A.I	-	-	-	for Polarity
33	(NO USE)	D.I	(I_PU)	-	-	-
34	(NO USE)	D.I	(I_PU)	-	-	-
35	(NO USE)	D.I	(I_PU)	-	-	-
36	(NO USE)	D.I	(I_PU)	-	-	-
37	VDD	-	-	-	-	-
38	VSS	-	-	-	-	-
39	Supply_EEP	D.O	(Fixed)	-	-	-
40	Serial_Data(I2C)	D.I/O	-	-	-	-
41	Serial_Clk(I2C)	D.O	-	-	-	-
42	MODE	D.I	-	-	(Fixed)	-
43	(NO USE)	D.O	-	-	(Fixed)	-
44	(NO USE)	D.O	-	-	-	-
45	VBACK	A.I	-	-	-	-
46	(NO USE)	-	-	-	(I_PD)	-
47	(NO USE)	D.I	-	-	(Fixed)	-
48	VDD	-	-	-	-	-
49	(NO USE)	D.I	-	-	(Fixed)	-
50	(NO USE)	D.I	(Fixed)	-	-	-
51	(NO USE)	D.I	-	-	(Fixed)	-
52	(NO USE)	D.I	-	-	(Fixed)	-
53	VSS	-	-	-	-	-
54	VDD	-	-	-	-	-
55	KEY_IN	D.I	No Key	-	Key	-
56	(NO USE)	D.I/O	-	-	(I_PD)	-
57	PULSE_CTRL	D.I/O	Q7_ON	-	Q7_OFF	-
58	(NO USE)	D.I/O	-	-	(I_PD)	-
59	(NO USE)	D.I/O	-	-	(I_PD)	-
60	(NO USE)	D.I/O	-	-	(I_PD)	-
61	HOOK_CTRL	D.O	Make	-	Break	-
62	(NO USE)	D.I/O	-	-	(I_PD)	-

Pin	Description	I/O	Hi	Hi-z	Low	Remarks
63	ANT1	D.O	ANT1_ON	-	ANT1_OFF	-
64	ANT2	D.O	ANT2_ON	-	ANT2_OFF	-

Note:

I_PU; Internal Pull-Up, I_PD; Internal Pull-Down

21 CPU DATA (HANDSET)

21.1. IC4 (BBIC)

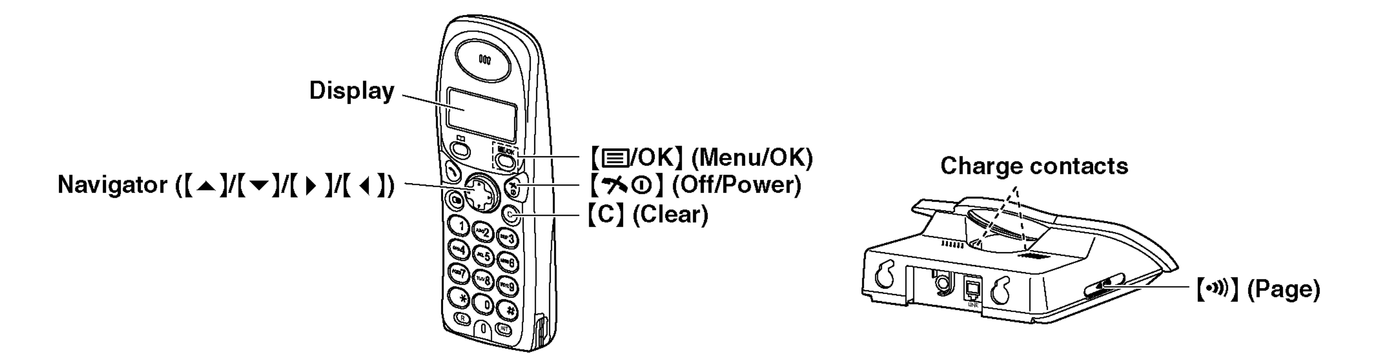
Pin	Description	I/O	Hi	Hi-z	Low	Remarks
1	LCD_SEGMENT	D.O	-	-	-	-
2	LCD_COMMON	D.O	-	-	-	-
3	VDD	-	-	-	-	-
4	VSS	-	-	-	-	-
5	LCD_COMMON	D.O	-	-	-	-
6	LCD_COMMON	D.O	-	-	-	-
7	LCD_COMMON	D.O	-	-	-	-
8	LCD_COMMON	D.O	-	-	-	-
9	LCD_COMMON	D.O	-	-	-	-
10	PA_SW	D.O	PA ON	-	PA OFF	-
11	T/R SW	D.O	Transmit	-	Recieve	-
12	RX_DATA	D.I	-	-	-	-
13	SYEN	D.O	-	-	-	-
14	SYDA	D.O	-	-	-	-
15	SYCL	D.O	-	-	-	-
16	TX_DATA	A.O	-	-	-	-
17	KEY_IN	D.I	No Key	-	Key_In	-
18	KEY_IN	D.I	No Key	-	Key_In	-
19	KEY_IN	D.I	No Key	-	Key_In	-
20	KEY_IN	D.I	No Key	-	Key_In	-
21	KEY_IN	D.I	No Key	-	Key_In	-
22	(NO USE)	D.O	-	-	-	-
23	Reference clock	D.O	-	-	-	-
24	VDD	-	-	-	-	-
25	VSS	-	-	-	-	-
26	POWER_SW	A.I	SW OFF	-	SW_ON	-
27	CHARGE_DET	A.I	Charge	-	No_charge	-
28	DCDCDRV	D.O	-	-	-	-
29	DCDCCMR	A.I	-	-	-	-
30	RESET	A.I	Non Active	-	Active	-
31	VSSO	-	-	-	-	-
32	LOAD	A.I	-	-	-	-
33	XTAL	A.I	-	-	-	-
34	VDDPM	A.O	-	-	-	-
35	VDDLO	A.O	-	-	-	-
36	VDDBAT	A.I	-	-	-	-
37	VDDLR	-	-	-	-	-
38	CHARGE_START	A.O	-	-	-	for charge
39	VDDA	-	-	-	-	-
40	VSSA	-	-	-	-	-
41	LSRN	A.O	-	-	-	-
42	LSRP	A.O	-	-	-	-
43	BANDGAP_REF	A.O	-	-	-	-
44	MICS	A.O	-	-	-	-
45	MICP	A.I	-	-	-	-
46	MICN	A.I	-	-	-	-
47	Reference Voltage	A.O	-	-	-	-
48	RSSI	A.I	-	-	-	-
49	P0.4	D.I	-	-	-	-
50	AD4N	A.I	-	-	-	-
51	AD4P	A.I	-	-	-	-
52	(NO USE)	D.I	-	-	-	-
53	KEY_STRB	D.O	Active	-	-	-
54	KEY_STRB	D.O	Active	-	Non_Active	-
55	KEY_STRB	D.O	Active	-	Non_Active	-
56	LCD_SEGMENT	D.O	-	-	-	-
57	LCD_SEGMENT	D.O	-	-	-	-
58	LCD_SEGMENT	D.O	-	-	-	-
59	KEY_STRB	D.O	Active	-	Non_Active	-
60	KEY_STRB	D.O	Active	-	Non_Active	-
61	LCD_SEGMENT	D.O	-	-	-	-
62	LCD_SEGMENT	D.O	-	-	-	-

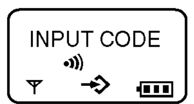
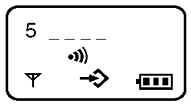
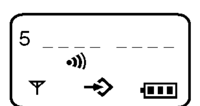
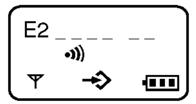
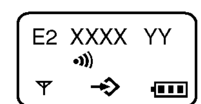
Pin	Description	I/O	Hi	Hi-z	Low	Remarks
63	VDD	-	-	-	-	-
64	VSS	-	-	-	-	-
65	VDD for EEPROM	D.O	-	-	-	-
66	I2DAT	D.I/O	-	-	-	-
67	I2CLK	D.I/O	-	-	-	-
68	MODE	D.I	-	-	-	-
69	R2	D.I	-	-	-	-
70	RINGER	D.O	RINGER_ON	-	RINGER_OFF	-
71	VBACK/P0.7	D.I	-	-	-	-
72	LCD_SEGMENT	D.O	-	-	-	-
73	LCD_SEGMENT	D.O	-	-	-	-
74	LCD_SEGMENT	D.O	-	-	-	-
75	LCD_SEGMENT	D.O	-	-	-	-
76	LCD_SEGMENT	D.O	-	-	-	-
77	VDDLI	-	-	-	-	-
78	LCD_SEGMENT	D.O	-	-	-	-
79	LCD_SEGMENT	D.O	-	-	-	-
80	LCD_SEGMENT	D.O	-	-	-	-
81	LCD_SEGMENT	D.O	-	-	-	-
82	LCD_SEGMENT	D.O	-	-	-	-
83	LCD_SEGMENT	D.O	-	-	-	-
84	LCD_SEGMENT	D.O	-	-	-	-
85	VSS	-	-	-	-	-
86	VDD	-	-	-	-	-
87	LCD_SEGMENT	D.O	-	-	-	-
88	LED_ON	D.O	LED_ON	-	LED_OFF	-
89	Power Select	D.O	Low Power	-	High Power	-
90	LCD_SEGMENT	D.O	-	-	-	-
91	LCD_SEGMENT	D.O	-	-	-	-
92	LCD_SEGMENT	D.O	-	-	-	-
93	LCD_SEGMENT	D.O	-	-	-	-
94	LCD_SEGMENT	D.O	-	-	-	-
95	LCD_SEGMENT	D.O	-	-	-	-
96	LCD_SEGMENT	D.O	-	-	-	-
97	LCD_SEGMENT	D.O	-	-	-	-
98	LCD_SEGMENT	D.O	-	-	-	-
99	LCD_SEGMENT	D.O	-	-	-	-
100	LCD_SEGMENT	D.O	-	-	-	-

22 ENGINEERING MODE

22.1. Base Unit

Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



H/S key operation	H/S LCD
1). Register a Handset to a Base Unit.	
2). Press 【☰/OK】 (Menu/OK) key.	
3). Select "SETTING BS" using 【▼】 key.	
4). Press 【▶】 (OK) key.	
5). Press "5" and "0000". ("0000" is default PIN code.) (*1)	
6). Press "0163", "3811", then "E" is displayed on LCD.	
7). Press "2".	
8). Press "XXXX" (Address) and "YY" (New Data).*	
9). Press 【▶】 (OK) key.	
10). Press 【◀】 key and repeat from Step 8.	

If press 【⏻】 (Off/Power) twice anytime, return to standby mode.

Note:
(*1) Refer to **For Service Hint** (P.11).

Note:

*: When you enter the address, please refer to the table below.

Desired Number (hex)	Input Keys	Desired Number (hex)	Input Keys
0	0	A	[R] + 0
1	1	B	[R] + 1
.	.	C	[R] + 2
.	.	D	[R] + 3
.	.	E	[R] + 4
9	9	F	[R] + 5

ex.)

Items (*2)	Address	Default Data	New Data		Remarks
C-ID (FSK) sensitivity	0A1D~0A1E	00 6D	(3dB up) 00 A4	(6dB up) 00 E7	When hex changes from “006D” to “00A4” or “00E7”, gain increases by 3dB or 6dB.
C-ID (DTMF) sensitivity	0A 2D	34	(3dB up) 38	(6dB up) 3C	When hex changes from “34” to “38” or “3C”, gain increases by 3dB or 6dB.
Frequency	00 00~00 01	00 60	-	-	Use these items in a **READ-ONLY** mode to confirm the contents. Careless rewriting may cause serious damage to the computer system.
ID	00 20~00 24	Given value	-	-	
Bell length	0F 12	3C (6sec) (*1)	1E (3sec)	14 (2sec)	This is time until bell stops ringing. (Unit: 100ms)
PULSE Dial speed (10PPS -> 20PPS)	0F 06	28 (40msec) (*1)	14 (20msec)	-	This is pulse make time. (Unit:1ms)
	0F 07	3C (60msec) (*1)	1E (30msec)	-	This is pulse break time. (Unit:1ms)
	0F 0A	4A (740msec) (*1)	2C (440msec)	-	This is inter-digit time in pulse mode. (Unit:10ms)

(*1)

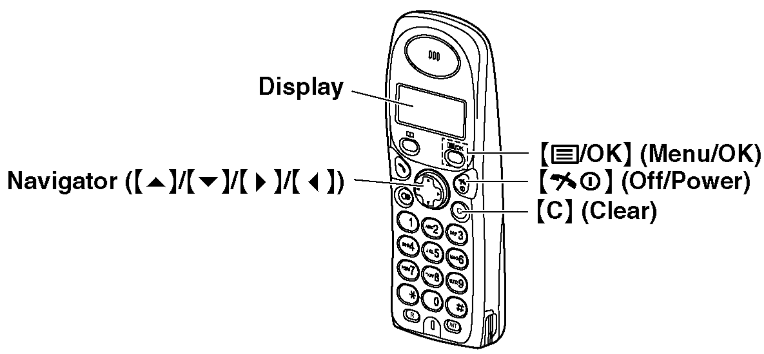
Bell length	3C (hex) = 60 (dec) → 60 × 100msec = 6000msec (6sec)
PULSE Dial speed (10PPS -> 20PPS)	28 (hex) = 40 (dec) → 40 × 1msec = 40msec
	3C (hex) = 60 (dec) → 60 × 1msec = 60msec
	4A (hex) = 74 (dec) → 74 × 10msec = 740msec

(*2)

Items	Description
C-ID (FSK) sensitivity	FSKGain_shiftgain
C-ID (DTMF) sensitivity	Foutgains:HPFilter Foutgains
Frequency	Setting value of FREQ_TRIM_REG
ID	ID
Bell length	Time until it stops bell.
PULSE Dial speed (10PPS -> 20PPS)	Pulse MakeTime and BreakTime. bMakeTime:Pulse MakeTime Unit: 1ms bBreakTime:Pulse Break Time Unit: 1ms
	Inter-digit time in Pulse mode. Unit:10ms

22.2. Handset

Important:
Make sure the address on LCD is correct when entering new data. Otherwise, you may ruin the unit.



H/S key operation	H/S LCD
1). Press 【☰/OK】 (Menu/OK) key.	NEW PHONE
2). Select "SETTING HS" using 【▼】 key, then Press 【▶】 (OK) key.	SETTING HS
3). Select "OTHER OPT" using 【▼】 key, then Press 【▶】 (OK) key.	OTHER OPT
4). When "HSPIN CHANGE" is displayed, Press 【▶】 (OK) key.	HSPIN CHANGE
5). Press "0000" as an old PIN code. (This is default PIN code.) (*1)	OLD PIN _ _ _ _
6). Press "0163" as a new PIN code.	NEW PIN _ _ _ _
7). Press "3811", then "E" is displayed on LCD.	VERIFY _ _ _ _
8). Press "2".	E2 _ _ _ _ _ _
9). Press "XXXX" (Address) and "YY" (New Data).*	E2 XXXX YY
10). Press 【▶】 (OK) key.	
11). Press 【◀】 key and repeat from Step 9.	

If press 【⏻】 (Off/Power) twice anytime, return to standby mode.

Note:
(*1) Refer to **For Service Hint** (P.11).

Note:

*: When you enter the address, please refer to the table in **Note:** (P.55) of **ENGINEERING MODE**.

ex.)

Items (*4)	**Address**	**Default Data**	**New Data**	**Possible Adjusted Value MAX (hex)**	**Possible Adjusted Value MIN (hex)**	**Remarks**
Sending level	0F 35	Adjusted value	Given value	30	00	(*1)
Receiving level	0F 37	Adjusted value	Given value	70	40	(*2)
Battery Low	0F 04	9A	-	-	-	(*3)
Frequency	00 00~00 01	00 60	-	-	-	
ID	00 30~00 34	Given value	-	-	-	

(*1) When adding “01” (hex) to default value, sending level increases by 1.0dB.

ex.)

Item	**Default Data**	**New Data**	
	1C	1D	1B
Sending level	-7.5dBm	-6.5dBm	-8.5dBm

(*2) When reducing “01” (hex) from default value, receiving level increases by 1.0dB.

ex.)

Item	**Default Data**	**New Data**	
	5B	5A	5C
Receiving level	-23.0dBm	-24.0dBm	-22.0dBm

(*3) Use these items in a READ-ONLY mode to confirm the contents. Careless rewriting may cause serious damage to the Handset.

(*4)

Items	**Description**
Sending level	Analog Front End MIC Setting for Handset Mode
Receiving level	Analog Front End LSR Setting for Handset Mode
Battery Low	ADC value for battery low detection
Frequency	Setting value of FREQ_TRIM_REG
ID	International Portable Part Equipment Identities

23 EEPROM LAYOUT (BASE UNIT)

23.1. Scope

The purpose of this section is to describe the layout of the EEPROM (IC1) for the KX-TG1105/1106 Base Unit.

The EEPROM contains hardware, software, and user specific parameters. Some parameters are set during production of the base e.g. crystal frequency adjustment at address 0000 and 0001, some are set by the user configuration e.g. ringer volume at address 0220, and some are set during normal use of the phone.

23.2. Introduction

The base unit uses a 32 K bit serial EEPROM (IC1) for storing volatile parameters. All parameters are set up before the base leaves the factory. Some of these are vital for the operation of the hardware so a set of default parameters is programmed before the actual hardware fine-tuning can be initiated. This document lists all default settings with a short description.

In the tables below values in a range that are similar are not repeated; i.e. Address 00 to 01 contains the value 00 simply means that the value 00 is repeated in all addresses in the range. All values in this document are in hexadecimal notation.

Type	Name	Description
D	default	The EEPROM location is preset to the Default value by the eeprom default loader.
A	adjust	The EEPROM location is set during the production test and should not be overwritten. The value is set by the eeprom default loader only if the location contains all 1's (byte: 0xFF, word FFFFh), i, e. it has never been set.
-		EEPROM location which is not set at all.

Country Setting	x	Default - no specific country setting, so revert to default value

23.3. EEPROM Layout

23.3.1. General Setup

Address	Default	Name	Country Setting	Type	Description
0000-0001	00 E0	EepromOscillator	x	A	Frequency adjustment
0002	20	ModulationDeviation	x	A	Modulation adjustment
0020-0024	-	RFPI (ID for Base Unit)	x	A	RFPI
0025-0026	00 00	AC (Base PIN code)	x	D	AC code
0028	00	Tbr22Test	x	D	TBR22 test
0030-0034	FF .. FF	IPUI_1 (ID for H/S 1)	x	D	Ipui for handset 1. If set to FF .. FF (5bytes) the handset is not enrolled.
0035-0039	FF .. FF	IPUI_2 (ID for H/S 2)	x	D	Ipui for handset 2. If set to FF .. FF (5bytes) the handset is not enrolled.
003A-003E	FF .. FF	IPUI_3 (ID for H/S 3)	x	D	Ipui for handset 3. If set to FF .. FF (5bytes) the handset is not enrolled.
003F-0043	FF .. FF	IPUI_4 (ID for H/S 4)	x	D	Ipui for handset 4. If set to FF .. FF (5bytes) the handset is not enrolled.
0044-0048	FF .. FF	IPUI_5 (ID for H/S 5)	x	D	Ipui for handset 5. If set to FF .. FF (5bytes) the handset is not enrolled.
0049-004D	FF .. FF	IPUI_6 (ID for H/S 6)	x	D	Ipui for handset 6. If set to FF .. FF (5bytes) the handset is not enrolled.
004E-008F	-	Reserved	x	-	Reseved for protocol
0090-009F	-	UAK_1	x	-	UAK for handset 1 (for factory use)
00A0-00AF	-	UAK_2	x	-	UAK for handset 2 (for factory use)
00B0-00BF	-	UAK_3	x	-	UAK for handset 3 (for factory use)
00C0-00CF	FF .. FF	UAK_4	x	D	UAK for handset 4 (for factory use)
00D0-00DF	FF .. FF	UAK_5	x	D	UAK for handset 5 (for factory use)
00E0-00EF	FF .. FF	UAK_6	x	D	UAK for handset 6 (for factory use)

23.3.2. Switch Control

Address	Default	Name	Country Setting	Type	Description
09F1	00	HsRegInfo.RegFlags	x	D	Handset registration info - registration ON/OFF bit 7 6 5 4 3 2 1 0 H/S6 · · · · · · H/S1 6..7: not used 0..5: handset 1..6 info, 1=reg, 0=no reg

Address	Default	Name	Country Setting	Type	Description
09F2	00	HsRegInfo.EmcFlags	x	D	Handset registration info - EMC flags Bit 6..7: not used 0..5: handset 1..6 info, 1=known, 0=unknown
09F3	21	RingMode	x	D	Ring mode. Modes used in KAMMA4 are 20h and 21h. Bit 7..5: Mode (001=group) 13: Not used 3..0: Id (001= id of first group)

23.3.3. Flash Time setting

Address	Default	Name	Country Setting	Type	Description
0F0B	08	CalibBreakTime[0]	0A	D	Calibrated loop-break time for short break Unit: 10 ms, defaults to 80 ms
0F0C	14	CalibBreakTime[1]	46	D	Calibrated loop-break time for long break Unit: 10 ms, defaults to 200 ms
0F0D	46	CalibBreakTime[2]	14	D	Calibrated loop-break time for extra-long break Unit: 10 ms, defaults to 700 ms

23.3.4. Clip (Caller ID) configuration

Address	Default	Name	Country Setting	Type	Description
0F1C	70	Detect	74	D	CLIP detect configuration Bit 0-2: Mode: 0: Learn mode, 1: DTMF only, 2: FSK only, 3: Generic mode, 4: Russian CLIP only 3: Unused4 4: Onhook: 1=enable 0=disable 5: Offhookk: 1=enable 0=disable 6: MsgWaiting: 1=enable 0=disable 7: NoDtas: 1=enable 0=disable
0F37..38	3D 00	Parse.Configuration	x	D	Clip parse set configuration Bit 0: Etsi: 1=enable 0=disable 1: ForwardNumber: 1=enable 0=disable 2: Danish: 1=enable 0=disable 3: Dutch: 1=enable 0=disable 4: Canadian: 1=enable 0=disable 5: Swedish: 1=enable 0=disable 6: UserDefined: 1=enable 0=disable 7: KPN vmwi: 1=enable 0=disable 8: ProtocolPriority: If 2 mutually exclusive parameters occurs, the 1st in the protocol message has priority. 1=enable 0=disable 9: UseCallType: Verify the Call Type parameter, if available, when receiving Call Back CLIP at busy subscriber. 1=enable 0=disable 10: AddTop0IfNo0 Automatic addition of 0 if top of Caller ID is not 0. 1=enable 0=disable 11: DtmfDigitsOnly Parse DTMF clip without start and/or stop code. 1=enable 0=disable 12..15: Reserved10..Reserved15

23.3.5. BsUiTask settings

Address	Default	Name	Country Setting	Type	Description
0F4B	03	Config	13	D	BsUiTask configuration (MSB) Bits 1=enable 0=disable 0: AmPmClockSettingEnabled, enabled 1: ClipDetectionSettingEnabled, disabled 2: AkzMenuEnabled, disabled 3: HakzMenuEnabled, disabled 4: RussianClipSettingEnabled, disabled 5: SmscSendNumberSettingEnabled, disabled 6: SMSPabxSupportSettingEnabled, disabled 7: ARSDisablePossible, disabled

Address	Default	Name	Country Setting	Type	Description
0F4C	D7	Config	x	D	BsUiTask configuration (LSB) **Bits** 1=enable 0=disable 0: FlashTime1Enabled, **enabled** 1: FlashTime2Enabled, **enabled** 2: FlashTime3Enabled, **enabled** 3: KeyClicksEnabled, **disabled** 4: ARSCarrierMenuEnabled, **enabled** 5: ARSIntDeletionMenuEnabled, **enabled** 6: ARSMultipleCarrierMenuEnabled, **enabled** 7: ARSMultipleAreaCodeMenuEnabled, **enabled**
0F4E	FF	Config2	x	D	BsUiTask configuration 2 **Bits** 1=**enable** 0=disable 0: RingerModeMenuEnabled, **enabled** 1: CallRestrictionMenuEnabled, **enabled** 2: CancelHandsetMenuEnabled, **enabled** 3: BaseToneMenusEnabled, **enabled** 4: ARSMenuEnabled, enabled 5: CallCostMenuEnabled, enabled 6: BasePINMenuEnabled, enabled 7: DialModeMenuEnabled, enabled

24 EEPROM LAYOUT (HANDSET)

24.1. Scope

The purpose of this section is to describe the layout of the EEPROM (IC2) for the KX-TGA110 Handset.

The EEPROM contains hardware, software, and user specific parameters. Some parameters are set during production of the handset e.g. crystal oscillator adjustment at 0000..01, some are set by the user when configuring the handset e.g. ringer volume at 0F3E, and some during normal use of the phone.

24.2. Introduction

The handset uses a 32 k bit serial EEPROM (IC2) for storing volatile parameters. All parameters are set up before the handset the factory. Some of these are vital for the operation of the hardware so a set of default parameters is programmed before the actual hardware fine-tuning can be initiated. This document lists all default settings with a short description.

This document lists all default parameters with a short description.

In the tables below values in a range that are similar are not repeated; i.e. Address 00 to 01 contains the value 00 simply means that the value 00 is repeated in all addresses in the range.

Type	Name	Description
D	default	The EEPROM location is preset to the Default value by the eeprom default loader.
A	adjust	The EEPROM location is set during the production test and should not be overwritten. The value is set by the eeprom default loader only if the location contains 0xFF, i, e. it has never been set.
-		EEPROM location which is not set at all.

Country Setting	x	Default - no specific country setting, so revert to default value

24.3. EEPROM contents

24.3.1. General Setup

Address	Default	Name	Country Setting	Type	Description
0000-0001	00 60	EepromOscillator	-	A	Frequency adjustment
0002	0A	ModulationDeviation	-	A	Modulation adjustment
0030-0034	00	IPEI (ID for Handset)	-	A	IPEI
0036-003A	FF .. FF	PARK_1 (ID for Base 1)	-	-	PARK for registration 1
003B-003F	FF .. FF	PARK_2 (ID for Base 2)	-	D	PARK for registration 2
0040-0044	FF .. FF	PARK_3 (ID for Base 3)	-	D	PARK for registration 3
0045-0049	FF .. FF	PARK_4 (ID for Base 4)	-	D	PARK for registration 4
004A-004D	FF .. FF	PLI_1-PLI_4	-	D	Pli for registration 1-4. If set to FF the registration is deleted.
0100-0104	-	RFPI_1 (Base 1)	-	-	RFPI for registration 1
0105	-	SerClass_1	-	-	Service class for registration 1
0106	-	LAL_1	-	-	Location area level for registration 1
0107	-	IPUI_LEN_1	-	-	IPUI length for registration 1
0108-0114	-	IPUI_1	-	-	IPUI for registration 1
0115	-	ZAP_1	-	-	ZAP for registration 1
0116	-	STATUS_1	-	-	Status for registration 1
0117-126	-	UAK_1	-	-	UAK for registration 1
0130-134	FF .. FF	RFPI_2 (Base 2)	-	D	RFPI for registration 2
0135	FF	SerClass_2	-	D	Service class for registration 2
0136	FF	LAL_2	-	D	Location area level for registration 2
0137	FF	IPUI_LEN_2	-	D	IPUI length for registration 2
0138-0144	FF .. FF	IPUI_2	-	D	IPUI for registration 2
0145	FF	ZAP_2	-	D	ZAP for registration 2
0146	FF	STATUS_2	-	D	Status for registration 2
0147-0156	FF .. FF	UAK_2	-	D	UAK for registration 2
0160-0164	FF .. FF	RFPI_3 (Base 3)	-	D	RFPI for registration 3
0165	FF	SerClass_3	-	D	Service class for registration 3
0166	FF	LAL_3	-	D	Location area level for registration 3
0167	FF	IPUI_LEN_3	-	D	IPUI length for registration 3
0168-0174	FF .. FF	IPUI_3	-	D	IPUI for registration 3
0175	FF	ZAP_3	-	D	ZAP for registration 3
0176	FF	STATUS_3	-	D	status for registration 3
0177-0186	FF .. FF	UAK_3	-	D	UAK for registration 3
0190-0194	FF .. FF	RFPI_4 (Base 4)	-	D	RFPI for registration 4
0195	FF	SerClass_4	-	D	Service class for registration 4

Address	Default	Name	Country Setting	Type	Description
0196	FF	LAL_4	-	D	Location area level for registration 4
0197	FF	IPUI_LEN_4	-	D	IPUI length for registration 4
0198-01A4	FF .. FF	IPUI_4	-	D	IPUI for registration 4
01A5	FF	ZAP_4	-	D	ZAP for registration 4
01A6	FF	STATUS_4	-	D	Status for registration 4
01A7-01B6	FF .. FF	UAK_4	-	D	UAK for registration 4
0450-0451	00 00	HSPinCode	x	D	4 BCD Digits
0462	00	Language	x	D	00 = English 01 = Spanish 02 = French 03 = Italian 04 = Dutch 05 = Turkish 06 = Hungarian 07 = Portuguese 08 = Polish 09 = UnUsed 0A = German
0467	00	FactoryLanguageSetting	x	D	Factory setting for language: 00 = English 01 = Spanish 02 = French 03 = Italian 04 = Dutch 05 = Turkish 06 = Hungarian 07 = Portuguese 08 = Polish 09 = UnUsed 0A = German
0469	07	MaxDigitsToMatch in PhBook lookups	06	D	Valid values: 01 - FF Digits above this value will not be evaluated, when matching.
046A	05	MinDigitsToMatch in PhBook lookups	x	D	Valid values: 01 - FF (-Must be lower than MaxDigitsToMatch). -If all digits of one of the numbers match completely, -with at least this number of digits, we have a match. (-Or if they match completely with less digits, we also have match.)

24.3.2. Battery Parameters

Address	Default	Name	Type	Description
0F04	9A	LowVoltage	A	Voltage on which to start battery low-indication. The voltage has to be measured under this value for 8 secs before the handset start signaling low battery. LowVoltage[eeprom]=[ADC-steps]=LowVoltage[mV] (14.35[mV/step])

24.3.3. Default Audio-Parameters

Address	Default	Name	Country Setting	Type	Description
0F36	46	GR-offset for volumestep 1	44	D	Bit7: AOG Bit6: AOG2 Bit5-bit0: Gain-receive offset to volumestep 2 (values ranging from 0x00 to 0x30, each step representing 1 dB)
0F37	5F	GR-offset for volumestep 2	x	A	Bit7: AOG Bit6: AOG2 Bit5-bit0: Gain-receive (values ranging from 0x00 to 0x30, each step representing 1 dB)
0F38	00	GR-offset for volumestep 3	44	D	Bit7: AOG Bit6: AOG2 Bit5-bit0: Gain-receive offset to volumestep 2 (values ranging from 0x00 to 0x30, each step representing 1 dB)
0F3F	02	EEVoiceVolume	01	D	Volume of the earpiece (1 - 3)

24.3.4. Menu Configuration

Address	Default	Name	Country Setting	Type	Description
0F53	FF	MenuConfig	DF	D	bit 0 - Registration menu on/off 1/0 bit 1 - Select base menu on/off 1/0 bit 2 - Internal ringer menu on/off 1/0 bit 3 - Page ringer menu on/off 1/0 bit 4 - Standby mode menu on/off 1/0 bit 5 - Battery select menu on/off 1/0 bit 6 - Call waiting menu on/off 1/0 bit 7 - Clip list on/off 1/0
0F54	01	RecVolStoreEnabled	x	D	00 - Receiver volume will be reset to default value when hooking on. 01 - Receiver volume will be stored in eeprom when set in conversation.

25 HOW TO REPLACE THE FLAT PACKAGE IC

Even if you do not have the special tools (for example, a spot heater) to remove the Flat IC, with some solder (large amount), a soldering iron and a cutter knife, you can easily remove the ICs that have more than 100 pins.

25.1. PREPARATION

- PbF (: Pb free) Solder
- Soldering Iron

  Tip Temperature of 700°F ± 20°F (370°C ± 10°C)

  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Flux

  Recommended Flux: Specific Gravity → 0.82.

  Type → RMA (lower residue, non-cleaning type)

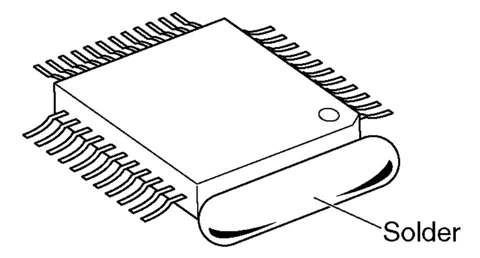
  Note: See **ABOUT LEAD FREE SOLDER (PbF: Pb free)** (P.4).

25.2. FLAT PACKAGE IC REMOVAL PROCEDURE

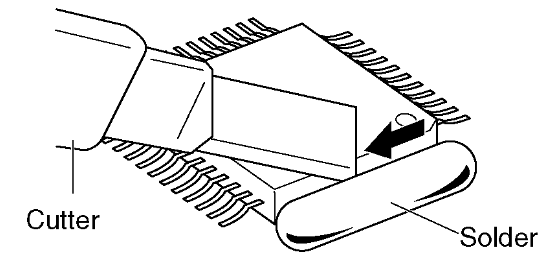
1. Put plenty of solder on the IC pins so that the pins can be completely covered.

   Note:

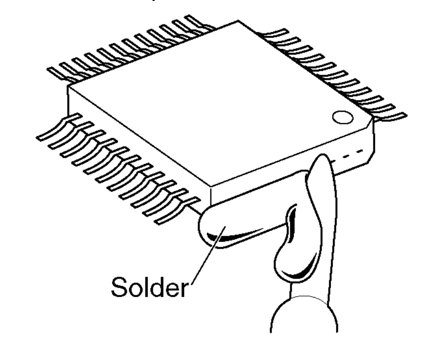
   If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



2. Make a few cuts into the joint (between the IC and its pins) first and then cut off the pins thoroughly.



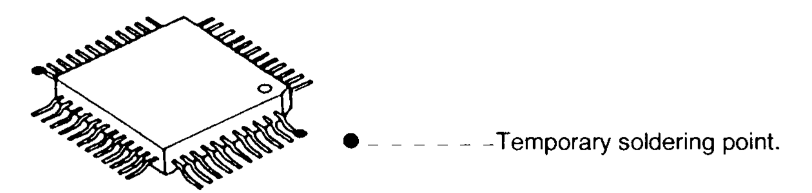
3. While the solder melts, remove it together with the IC pins.



When you attach a new IC to the board, remove all solder left on the land with some tools like a soldering wire. If some solder is left at the joint on the board, the new IC will not be attached properly.

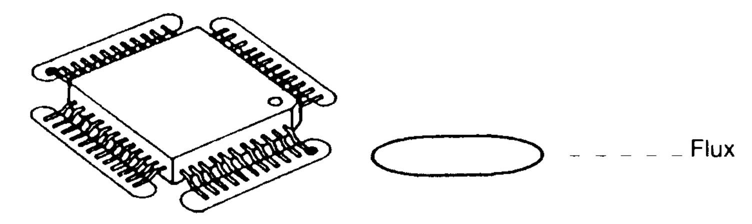
25.3. FLAT PACKAGE IC INSTALLATION PROCEDURE

1. Temporarily fix the FLAT PACKAGE IC, soldering the two marked pins.

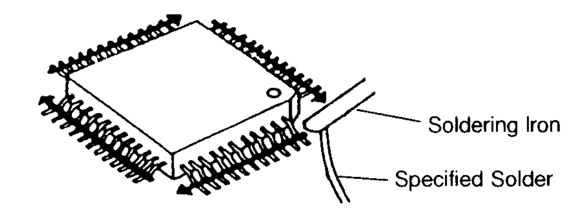


*Check the accuracy of the IC setting with the corresponding soldering foil.

2. Apply flux to all pins of the FLAT PACKAGE IC.

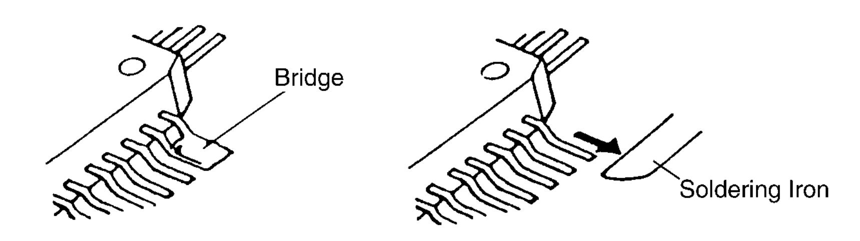


3. Solder the pins, sliding the soldering iron in the direction of the arrow.

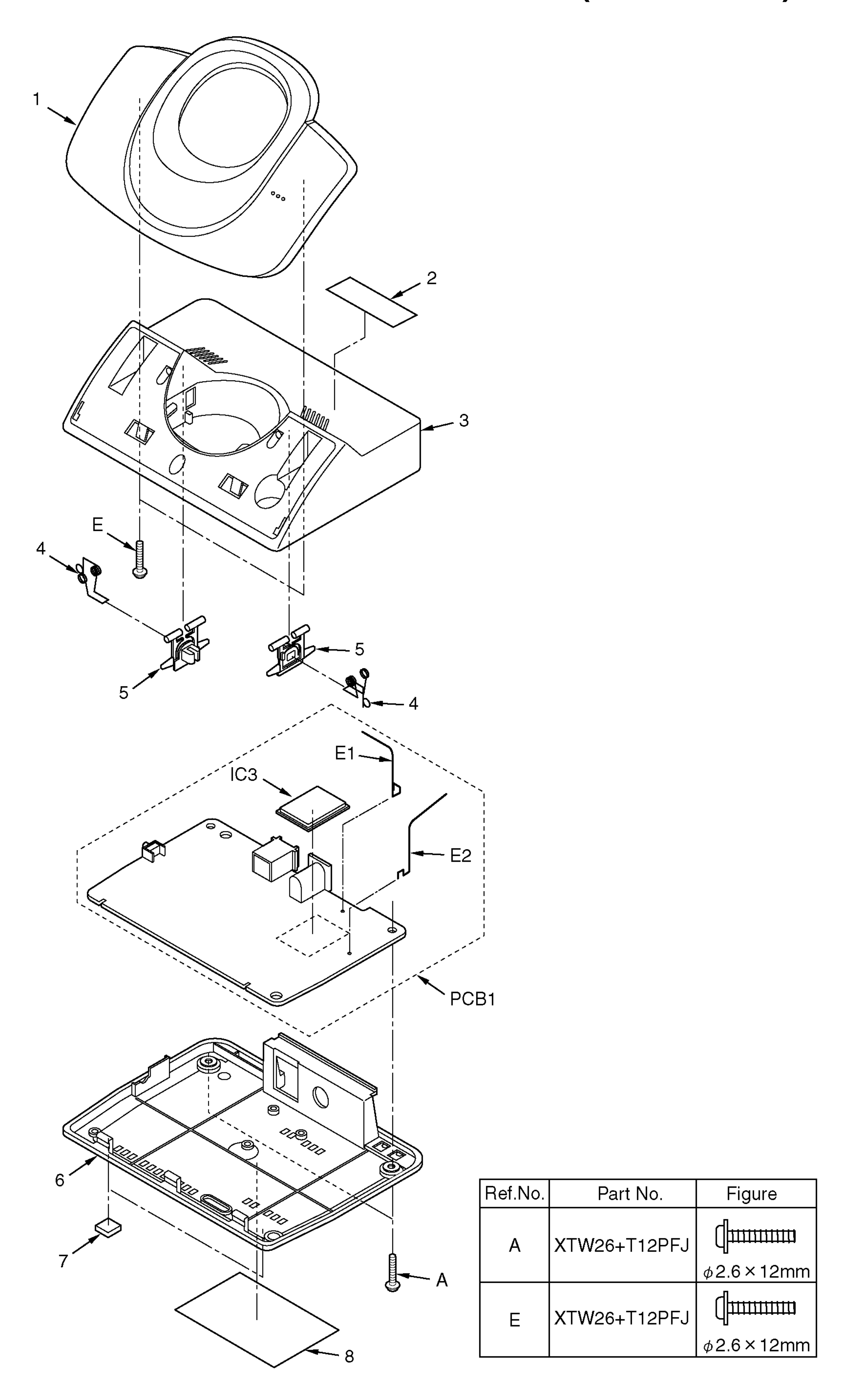


25.4. BRIDGE MODIFICATION PROCEDURE

1. Lightly resolder the bridged portion.
2. Remove the remaining solder along the pins using a soldering iron as shown in the figure below.

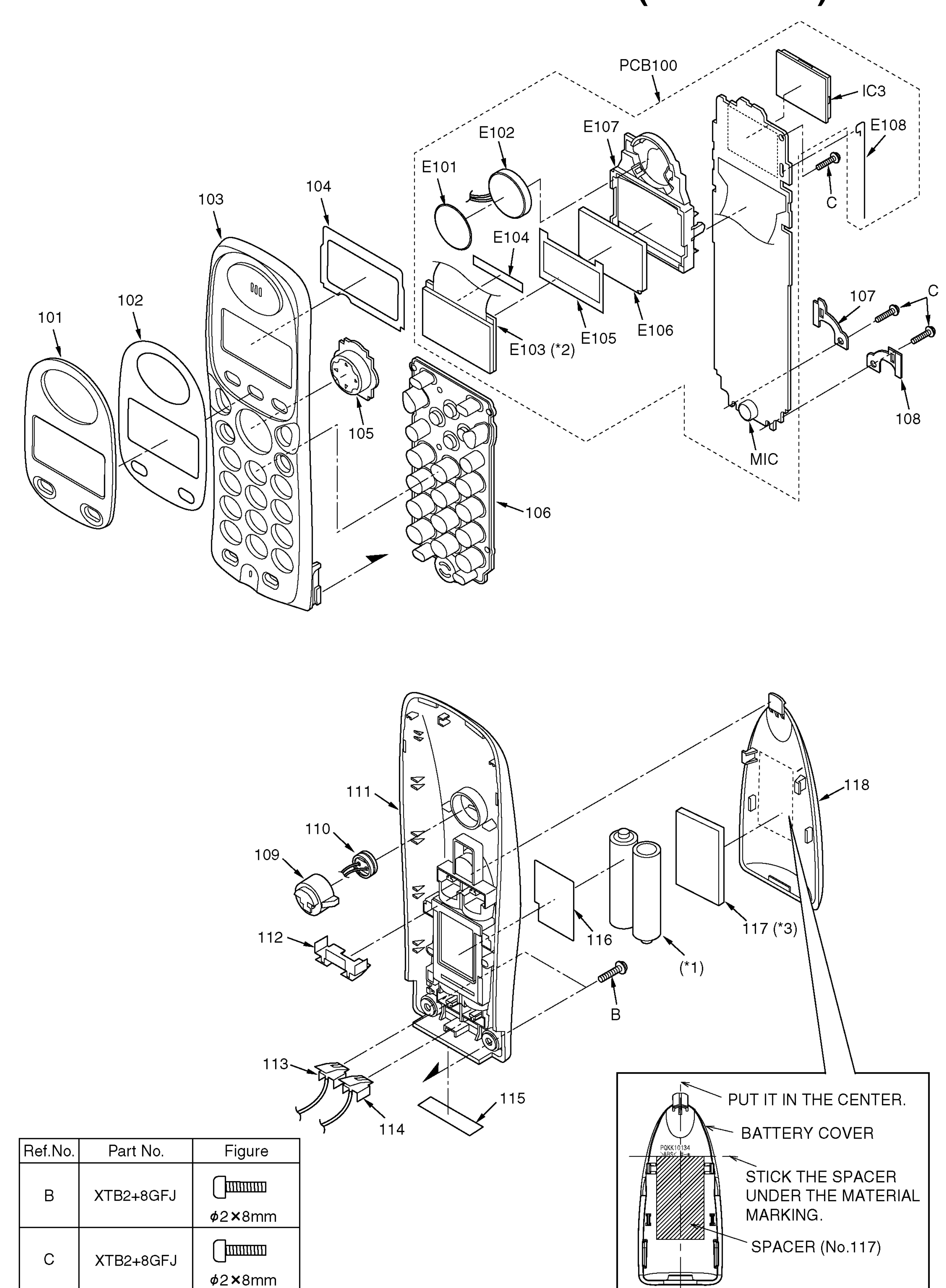


26 CABINET AND ELECTRICAL PARTS (BASE UNIT)



Ref.No.	Part No.	Figure
A	XTW26+T12PFJ	ϕ2.6×12mm
E	XTW26+T12PFJ	ϕ2.6×12mm

27 CABINET AND ELECTRICAL PARTS (HANDSET)



Ref.No.	Part No.	Figure
B	XTB2+8GFJ	φ2×8mm
C	XTB2+8GFJ	φ2×8mm

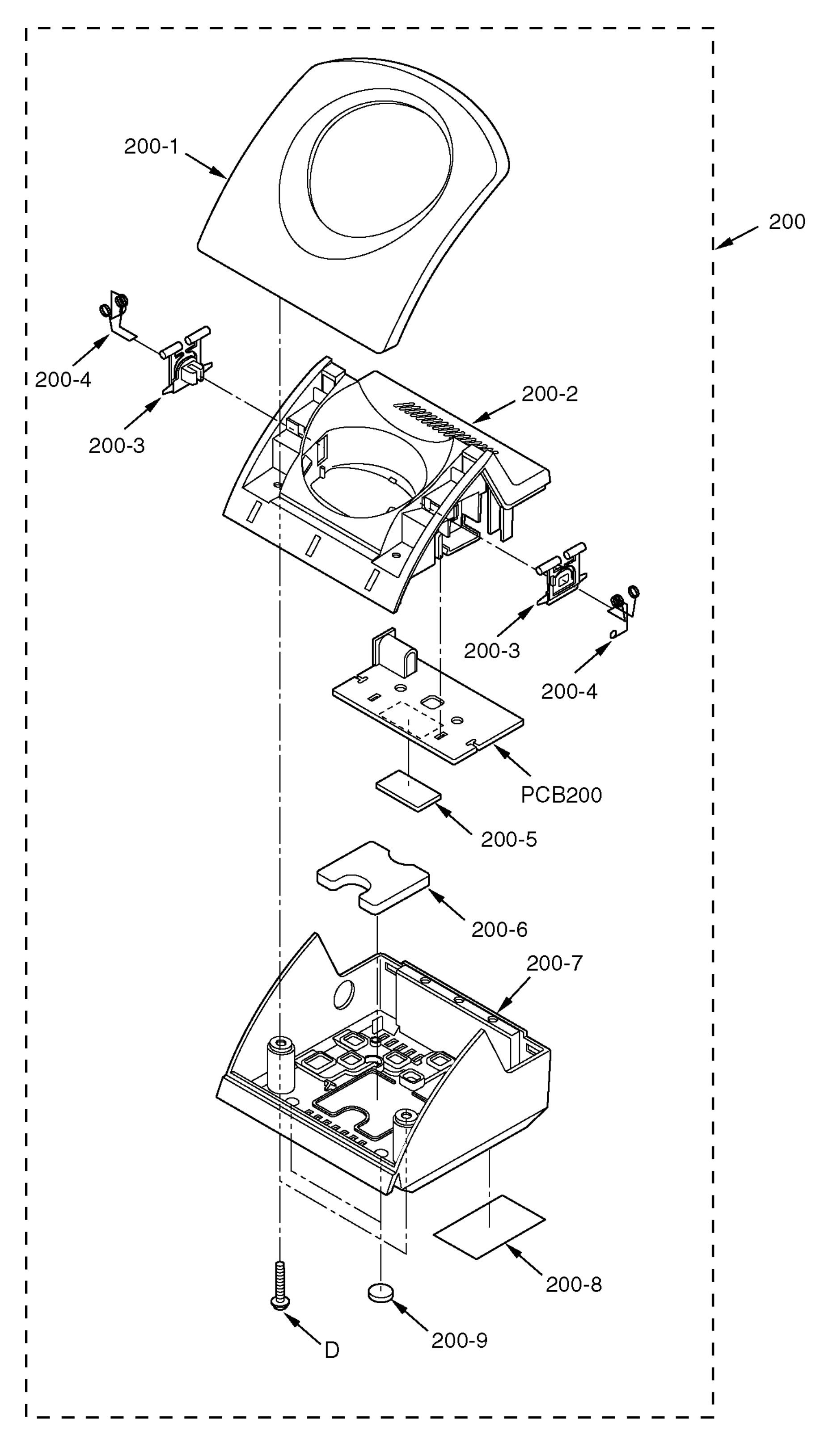
Note:

(*1) The rechargeable Ni-MH battery P03P (HHR-4EPT or HHR-55AAAB) is available through sales route of Panasonic.

(*2) This cable is fixed by welding. Refer to **How to Replace the Handset LCD** (P.16).

(*3) Attach the spacer (No. 117) to the exact location described above.

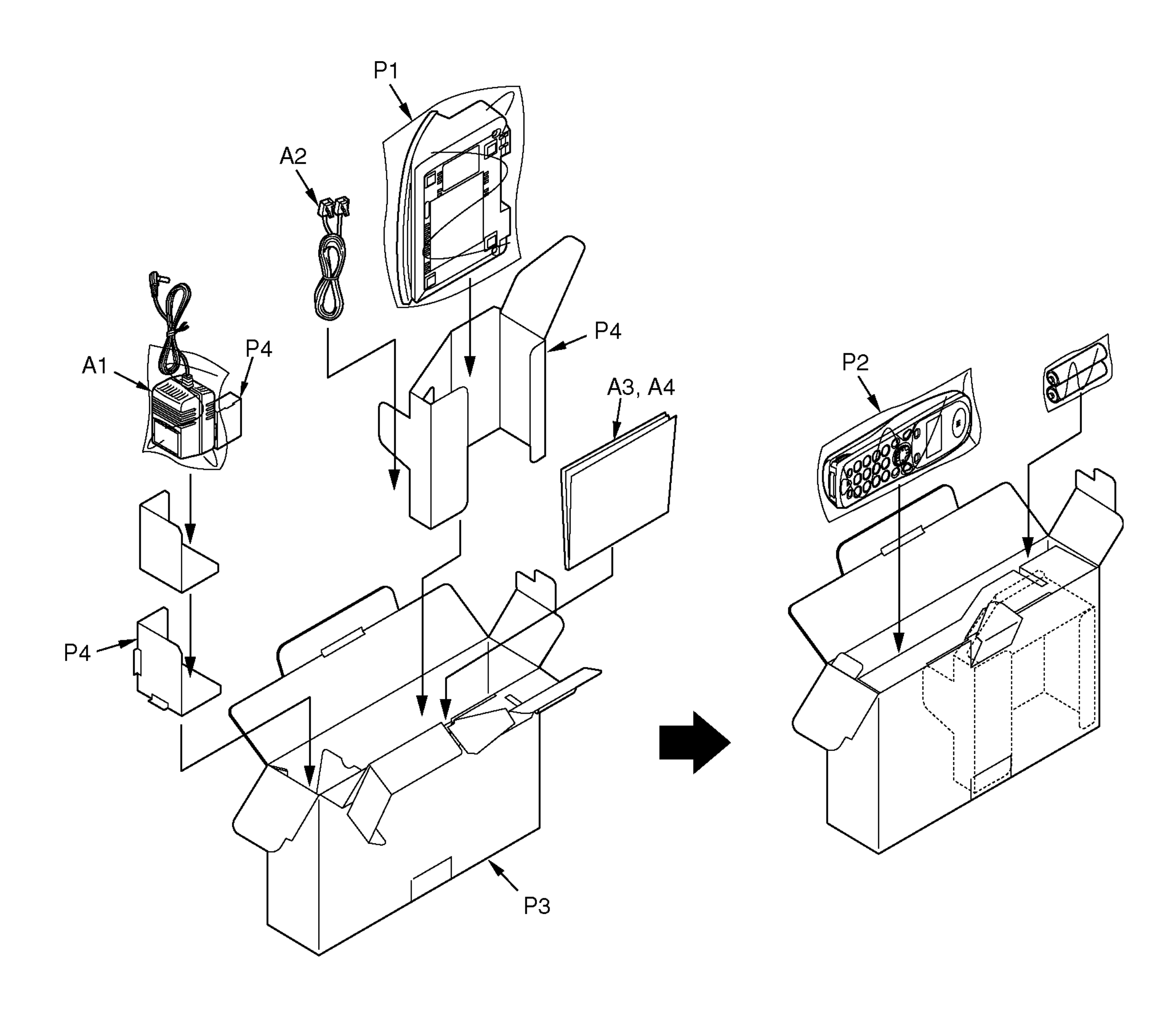
28 CABINET AND ELECTRICAL PARTS (CHARGER UNIT)



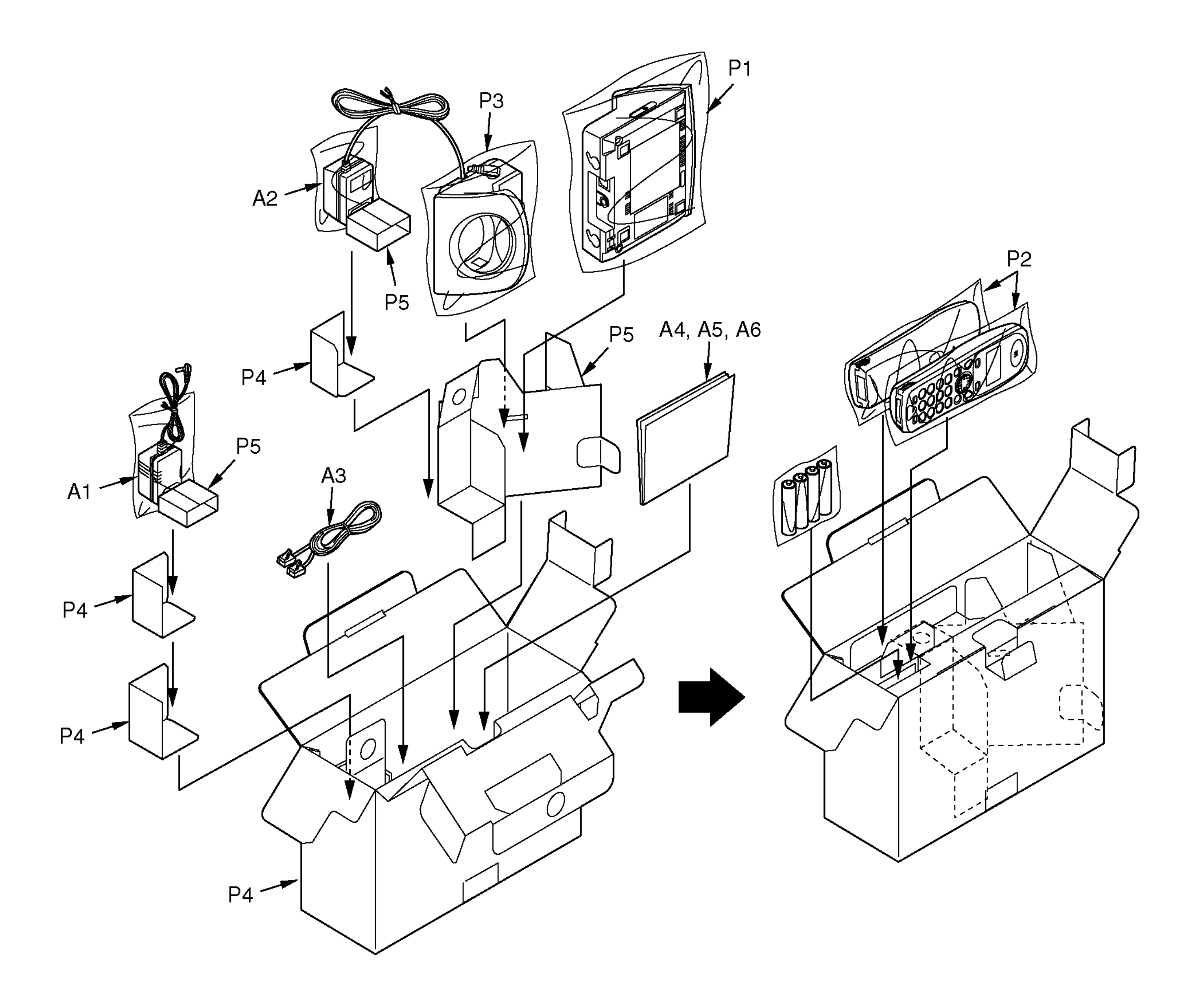
Ref.No.	Part No.	Figure
D	XTW26+T14PFJ	φ2.6 × 14mm

29 ACCESSORIES AND PACKING MATERIALS

29.1. KX-TG1105RUS/RUT

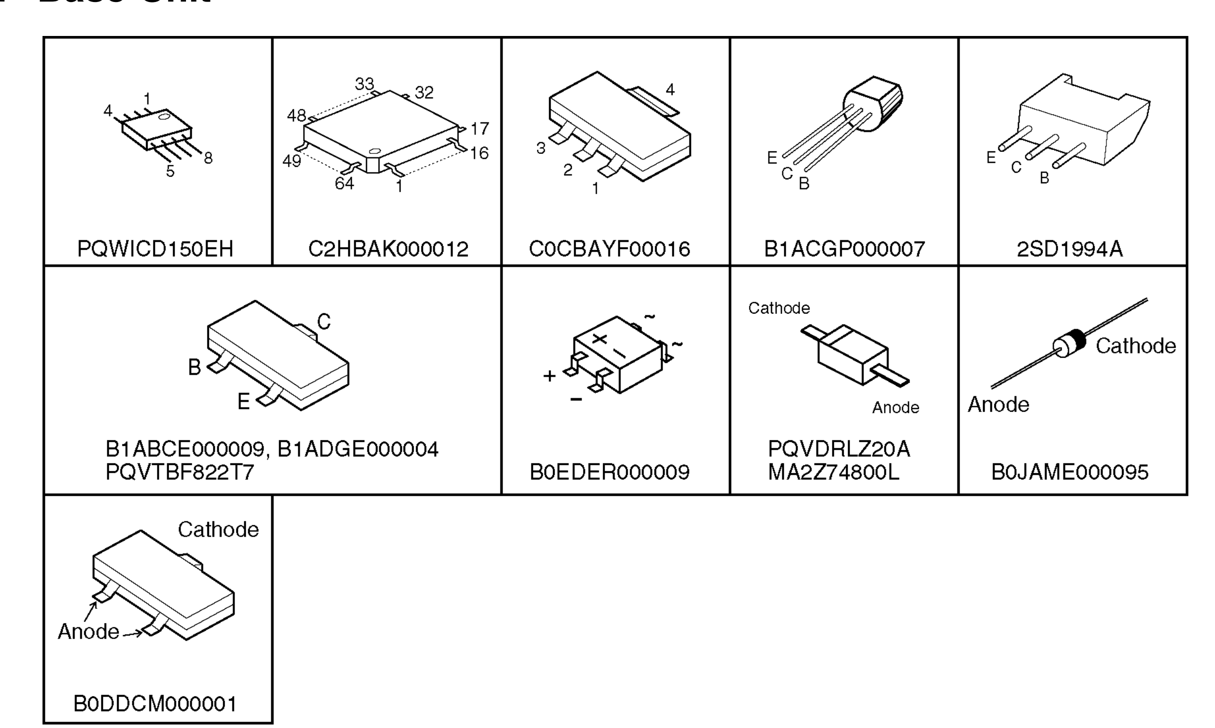


29.2. KX-TG1106RUS/RUT

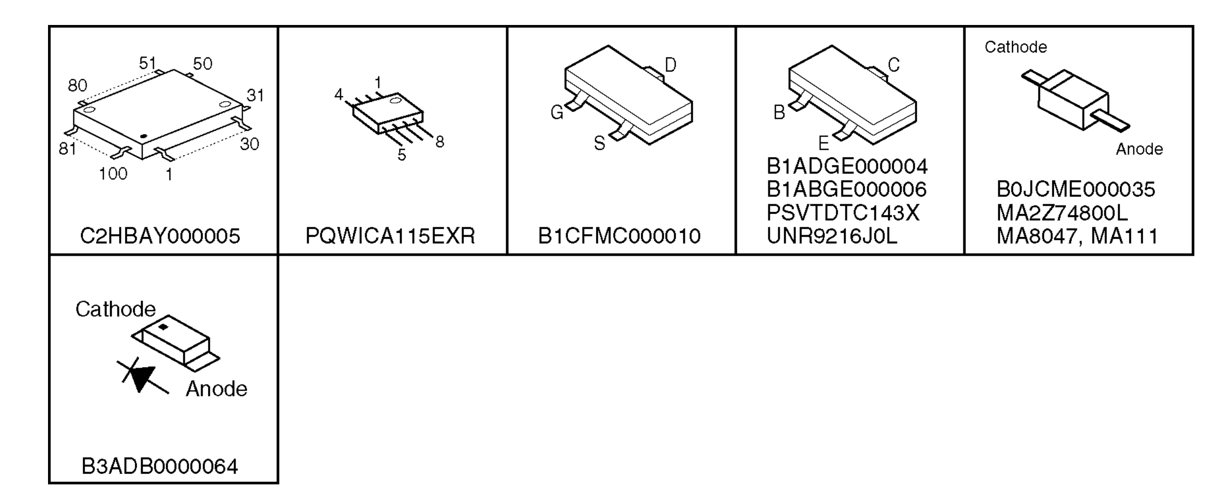


30 TERMINAL GUIDE OF THE ICs, TRANSISTORS AND DIODES

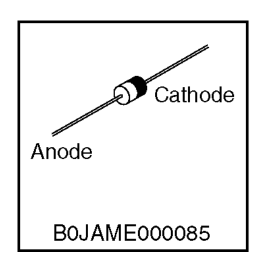
30.1. Base Unit



30.2. Handset



30.3. Charger Unit



31 REPLACEMENT PARTS LIST

1. RTL (Retention Time Limited)

   Note:

   The marking (RTL) indicates that the Retention Time is limited for this item.

   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
2. Important safety notice

   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.
3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.
4. ISO code (Example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.
5. RESISTORS & CAPACITORS

   Unless otherwise specified;

   All resistors are in ohms (Ω) K=1000Ω, M=1000kΩ

   All capacitors are in MICRO FARADS (μF)P=μμF

   *Type & Wattage of Resistor

Type

ERC:Solid ERDS:Carbon ERJ:Chip	ERX:Metal Film ERG:Metal Oxide ER0:Metal Film	PQ4R:Chip ERS:Fusible Resistor ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage Of Capacitor

Type

ECFD:Semi-Conductor ECQS:Styrol ECUV,PQCUV,ECUE:Chip ECQMS:Mica	ECCD,ECKD,ECBT,F1K,ECUV:Ceramic ECQE,ECQV,ECQG:Polyester ECEA,ECST,EEE:Electlytic ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V 2A:100V 2E:250V 2H:500V	05:50V 1:100V 2:200V	0F:3.15V 1A:10V 1V:35V 0J:6.3V	0J :6.3V 1A :10V 1C :16V 1E,25:25V	1V :35V 50,1H:50V 1J :16V 2A :100V

31.1. Base Unit

31.1.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQGG10245U7	GRILLE (for KX-TG1105RUS) (for KX-TG1106RUS)	ABS-HB
1	PQGG10245U9	GRILLE (for KX-TG1105RUT) (for KX-TG1106RUT)	ABS-HB
2	PQQT23169Z	LABEL, ATTENTION	
3	PQKM10586W3	CABINET BODY (for KX-TG1105RUS) (for KX-TG1106RUS)	PS-HB
3	PQKM10586W2	CABINET BODY (for KX-TG1105RUT) (for KX-TG1106RUT)	PS-HB
4	PQJT10203Z	CHARGE TERMINAL	
5	PQKE10356Z2	GUIDE, CHARGE TERMINAL	POM-HB
6	PQKF10581Z3	CABINET COVER (for KX-TG1105RUS) (for KX-TG1106RUS)	PS-HB
6	PQKF10581Z2	CABINET COVER (for KX-TG1105RUT) (for KX-TG1106RUT)	PS-HB
7	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
8	PQGT18699Z	NAME PLATE (for KX-TG1105RUS) (for KX-TG1106RUS)	
8	PQGT18699X	NAME PLATE (for KX-TG1105RUT) (for KX-TG1106RUT)	

31.1.2. Main P.C.Board Parts

Note:

(*1) When replacing IC1 and IC2, data need to be written to it with PQZZTG1105RU.

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWPG1105RUH	MAIN P.C.BOARD ASS´Y (RTL)	
		(ICs)	
IC1	PQWICD150EH	IC (EEPROM) (*1)	
IC2	C2HBAK000012	IC (BBIC) (*1)	
Q9	C0CBAYF00016	IC	
		(TRANSISTORS)	
Q2	B1ACGP000007	TRANSISTOR(SI)	
Q3	PQVTBF822T7	TRANSISTOR(SI)	
Q6	2SD1994A	TRANSISTOR(SI)	
Q7	B1ABCE000009	TRANSISTOR(SI)	
Q8	B1ADGE000004	TRANSISTOR(SI)	
		(DIODES)	
D2	B0EDER000009	DIODE(SI)	
D3	PQVDRLZ20A	DIODE(SI)	S
D4	B0JAME000095	DIODE(SI)	
D5	MA2Z74800L	DIODE(SI)	
DA1	B0DDCM000001	DIODE(SI)	
		(JACKS)	
J1	K2LB102B0053	JACK, MODULATOR	
J2	PQJJ1B4Y	JACK, DC	S
		(COILS)	
L1	PQLQR4D4R7K	COIL	S
L3	G1C4N7Z00007	COIL	
		(RESISTORS)	
R1	ERJ3GEYJ155	1.5M	
R2	ERJ3GEYJ155	1.5M	
R3	ERJ3GEYJ224	220K	
R4	ERJ3GEYJ184	180K	
R5	ERJ3GEYJ224	220K	
R6	ERJ3GEYJ184	180K	
R7	ERJ3GEYJ104	100K	
R8	ERJ3GEYJ272	2.7K	
R9	ERJ3GEYJ103	10K	
R10	ERJ3GEYJ222	2.2K	
R16	ERJ3GEYJ133	13K	
R18	ERJ3GEYJ392	3.9K	
R19	ERJ12YJ220	22	
R20	ERJ12YJ560	56	
R21	ERJ3GEYJ104	100K	
R22	ERJ3GEYJ333	33K	
R23	ERJ3GEYJ680	68	
R24	PQ4R18XJ100	10	S
R25	ERJ3GEYJ471	470	
R26	ERJ3GEYJ103	10K	
R27	ERJ3GEYJ681	680	
R28	ERJ3GEYJ821	820	
R29	ERJ3GEYJ101	100	
R30	ERJ3GEYJ101	100	
R31	ERJ3GEYJ101	100	
R32	ERJ3GEY0R00	0	
R38	ERJ3GEYJ330	33	

Ref. No.	Part No.	Part Name & Description	Remarks
R41	ERJ3GEYJ101	100	
R42	ERJ3GEYJ221	220	
R43	ERJ1WYJ330	33	
R44	ERJ1WYJ330	33	
R54	ERJ3GEYJ184	180K	
R57	ERJ3GEYJ103	10K	
R59	ERJ3GEYJ471	470	
R61	ERJ2GEJ470	47	
R66	ERJ3GEYJ180	18	
R67	ERJ3GEYJ151	150	
R78	ERJ3GEYJ151	150	
R79	ERJ3GEYJ180	18	
R82	ERJ3GEYJ184	180K	
L5	ERJ2GE0R00	0	
		(CAPACITORS)	
C1	ECKD2H681KB	680P	S
C2	ECKD2H681KB	680P	S
C3	ECQE2223KF	0.022	
C4	ECQE2223KF	0.022	
C11	ECUV1C223KBV	0.022	
C12	PQCUV1C474KB	0.47	
C13	ECUV1A105KBV	1	
C14	PQCUV1C474KB	0.47	
C15	ECEA1HKA100	10	
C16	PQCUV1H104ZF	0.1	S
C18	ECUV1H100DCV	10P	
C19	ECUV1H100DCV	10P	
C20	ECUV1C104KBV	0.1	
C21	ECUV1H100DCV	10P	
C23	ECUV1C104KBV	0.1	
C24	ECUV1C104KBV	0.1	
C25	ECEA1CKS100	10	S
C26	ECUV1C104KBV	0.1	
C27	ECUV1C104KBV	0.1	
C28	ECUV1C683KBV	0.068	
C29	ECUV1C683KBV	0.068	
C30	ECJ0EB1H182K	0.0018	
C31	ECJ0EB1A104K	0.1	
C32	ECUV1H270JCV	27P	
C33	ECUV1H1R0CCV	1P	
C34	ECUV1C104KBV	0.1	
C35	ECUV1C333KBV	0.033	
C36	ECUV1C104KBV	0.1	
C37	ECUV1C104KBV	0.1	
C38	ECUV1C104KBV	0.1	
C40	ECEA1CK101	100	S
C41	ECEA0JKA101	100	
C42	ECUV1H030CCV	3P	
C48	ECUV1H330JCV	33P	
C53	ECUV1H100DCV	10P	
C54	ECUV1H060DCV	6P	S
C56	ECUV1H100DCV	10P	
C58	ECUV1H100DCV	10P	
C59	ECUV1H100DCV	10P	
C66	ECUV1H020CCV	2P	
C67	ECUV1A475KB	4.7	
C69	ECUV1H100DCV	10P	
C72	ECUV1H0R5CCV	0.5P	
C73	ECUV1H100DCV	10P	
C83	ECJ1VC1H1R5C	1.5P	
C94	ECUV1H0R5CCV	0.5P	
C96	ECUV1H100DCV	10P	
C97	ECUV1H100DCV	10P	
C98	PQCUV1H0R5CC	0.5P	
C100	ECUV1H100DCV	10P	
C101	ECUV1H100DCV	10P	
C105	ECUV1H030CCV	3P	
C106	ECUV1H030CCV	3P	
L58	ECUV1H020CCV	2P	
		(OTHERS)	
E1	PQSA10132Z	ANTENNA, SUB	
E2	PQSA10182Z	ANTENNA, MAIN	
IC3	PQLP10268Z	RF UNIT	

Ref. No.	Part No.	Part Name & Description	Remarks
S1	K0H1BB000018	SPECIAL SWITCH, TACTILE	
SA1	J0LF00000026	VARISTOR (SURGE ABSORBER)	
X1	H0D103500003	CRYSTAL OSCILLATOR	

31.2. Handset

31.2.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQGP10311Z1	PANEL, LCD (for KX-TGA110RUS)	AS-HB
101	PQGP10311Z3	PANEL, LCD (for KX-TGA110RUT)	AS-HB
102	PQHS10737Z	TAPE, DOUBLE SIDE	
103	PQKM10722Z1	CABINET BODY (for KX-TGA110RUS)	ABS-HB
103	PQKM10722Z3	CABINET BODY (for KX-TGA110RUT)	ABS-HB
104	PQHS10738Z	SPACER, LCD	
105	PQBC10375Z1	PUSH BUTTON, NAVI	ABS-HB
106	PQSX10310W	KEYBOARD SWITCH (for KX-TGA110RUS)	
106	PQSX10310Z	KEYBOARD SWITCH (for KX-TGA110RUT)	
107	PQJT10204Z	TERMINAL (L)	
108	PQJT10205Z	TERMINAL (R)	
109	PQHG10684Z	RUBBER PARTS, RINGER	
110	L0DACD000002	BUZZER	
111	PQKF10582YE	CABINET COVER (for KX-TGA110RUS)	ABS-HB
111	PQKF10582Y8	CABINET COVER (for KX-TGA110RUT)	ABS-HB
112	PQJC10056Y	BATTERY TERMINAL	
113	PQJC10077Z	BATTERY TERMINAL (-)	
114	PQJC10076Z	BATTERY TERMINAL (+)	
115	PQGT18693Z	NAME PLATE (for KX-TGA110RUS)	
115	PQGT18693X	NAME PLATE (for KX-TGA110RUT)	
116	PQHX11421Z	PLASTIC PARTS, BATTERY COVER SHEET	
117	PQHS10561Y	SPACER, BATTERY COVER	
118	PQKK10134XP	LID, BATTERY COVER (for KX-TGA110RUS)	ABS-HB
118	PQKK10134XD	LID, BATTERY COVER (for KX-TGA110RUT)	ABS-HB

31.2.2. Main P.C.Board Parts

Note:

(*1) When replacing IC2 and IC4, data need to be written to it with PQZZTG1105RU.

(*2) When replacing the Handset LCD, see **How to Replace the Handset LCD** (P.16).

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWPGA110RUR	MAIN P.C.BOARD ASS´Y (RTL)	
		(ICs)	
IC2	PQWICA115EXR	IC (EEPROM) (*1)	
IC4	C2HBAY000005	IC (BBIC) (*1)	
		(TRANSISTORS)	
Q1	B1CFMC000010	TRANSISTOR(SI)	
Q2	B1ADGE000004	TRANSISTOR(SI)	
Q3	UNR9216J0L	TRANSISTOR(SI)	
Q4	PSVTDTC143X	TRANSISTOR(SI)	S
Q104	B1ABGE000006	TRANSISTOR(SI)	
		(DIODES)	
D1	B0JCME000035	DIODE(SI)	
D3	MA2Z74800L	DIODE(SI)	
D6	MA8047	DIODE(SI)	S
D7	MA8047	DIODE(SI)	S
D102	MA111	DIODE(SI)	S
LED101	B3ADB0000064	LED	
LED102	B3ADB0000064	LED	
		(COILS)	
L2	G1C470M00025	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L3	PQLQR4D4R7K	COIL	S
L4	G1C100MA0072	COIL	
L5	G1C100MA0072	COIL	
F1	PQLQR2M5N6K	COIL	S
		(RESISTORS)	
R1	ERJ2GEJ222	2.2K	
R2	ERJ8BQJR30	0.3	
R4	ERJ3GEYJ103	10K	
R5	ERJ2GEJ331	330	
R6	ERJ3GEYJ332	3.3K	
R7	ERJ2GEJ331	330	
R8	ERJ2GEJ331	330	
R18	ERJ2GEJ330	33	
R19	ERJ2GEJ153	15K	
R21	ERJ6RSJR10V	0.1	
R101	ERJ2GEJ820	82	
R102	ERJ2GEJ103	10K	
R103	ERJ2GEJ102	1K	
R110	PQ4R18XJ150	15	S
R111	ERJ2GEJ560X	56	
R112	ERJ3GEYJ2R2	2.2	
		(CAPACITORS)	
C1	F1K1C2250005	2.2	
C3	ECJ0EB1A104K	0.1	
C4	ECJ0EB1A104K	0.1	
C5	PQCUV0J475MB	4.7	
C6	ECJ0EC1H100D	10P	
C7	ECJ0EB1A104K	0.1	
C8	ECJ0EC1H100D	10P	
C14	EEE0JA331P	330	
C15	EEE0JA331P	330	
C16	ECJ0EC1H010C	1P	S
C18	ECJ0EB1A104K	0.1	
C20	ECJ0EB1A104K	0.1	
C21	ECJ0EB1A104K	0.1	
C22	ECJ0EB1A104K	0.1	
C23	ECJ0EB1A104K	0.1	
C24	ECJ0EB1A104K	0.1	
C26	ECJ0EB0J105K	1	
C27	ECJ0EB1A104K	0.1	
C28	ECJ0EB1A104K	0.1	
C29	ECJ0EB1A104K	0.1	
C30	ECJ0EB1A104K	0.1	
C32	ECJ0EB1H101K	100P	
C33	F1K0J1060020	10	
C34	F1K0J1060020	10	
C54	ECJ0EC1H220J	22P	
C57	ECJ0EC1H330J	33P	
C58	F1G1HR75A561	0.75P	
C61	ECUV1A105KBV	1	
C67	ECJ0EC1H100D	10P	
C68	ECJ0EC1H100D	10P	
C204	ECJ0EC1H180J	18P	
		(OTHERS)	
MIC	L0CBAY000006	MICROPHONE	
E101	PQHS10467Z	COVER, SP NET	
E102	L0AD02A00021	SPEAKER	
E103	L5ACAYY00002	LIQUID CRYSTAL DISPLAY (*2)	
E104	PQHS10740Z	TAPE, DOUBLE SIDE	
E105	PQHX11388Z	COVER, LCD COVER SHEET	
E106	PQHR11226Z	TRANSPARENT PLATE, LCD PLATE	PMMA-HB
E107	PQHR11225Z	GUIDE, LCD HOLDER	ABS-HB
E108	PQSA10193Z	ANTENNA	
IC3	PQLP10268Z	RF UNIT	
D2	D4ED1270A014	VARISTOR (SURGE ABSORBER)	
X1	H0D103500006	CRYSTAL OSCILLATOR	

31.3. Charger Unit

31.3.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
200	PQLV30018ZS4	CHARGER UNIT (for KX-TG1106RUS)	
200	PQLV30018ZT4	CHARGER UNIT (for KX-TG1106RUT)	
200-1	PQGG10155YJ	GRILLE (for KX-TG1106RUS)	ABS-HB
200-1	PQGG10155YL	GRILLE (for KX-TG1106RUT)	ABS-HB
200-2	PQKM10591YC	CABINET BODY (for KX-TG1106RUS)	PS-HB
200-2	PQKM10591Y1	CABINET BODY (for KX-TG1106RUT)	PS-HB
200-3	PQKE10356Z2	GUIDE, CHARGE TERMINAL CASE	POM-HB
200-4	PQJT10206Z	CHARGE TERMINAL	
200-5	PQHX10991Z	CUSHION, URETHANE FORM	
200-6	PQMH10426X	WEIGHT	
200-7	PQKF10586Z2	CABINET COVER (for KX-TG1106RUS)	PS-HB
200-7	PQKF10586Z1	CABINET COVER (for KX-TG1106RUT)	PS-HB
200-8	PQGT18766Z	NAME PLATE (for KX-TG1106RUS)	
200-8	PQGT18766X	NAME PLATE (for KX-TG1106RUT)	
200-9	PQHG316Y	RUBBER PARTS, FOOT CUSHION	

31.3.2. Main P.C.Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB200	PQWPA142ESCH	MAIN P.C.BOARD ASS´Y (RTL)	
		(DIODE)	
D1	B0JAME000085	DIODE(SI)	
		(JACK)	
CN1	PQJJ1B4Y	JACK	S
		(RESISTORS)	
R1	ERJ1WYJ220	22	
R2	ERJ1WYJ270	27	

31.4. Accessories and Packing Materials

Note:

(*1) You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

31.4.1. KX-TG1105RUS/RUT

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV19CEX	AC ADAPTOR	⚠
A2	PQJA10075Z	CORD, TELEPHONE	
A3	PQQX15244Z	INSTRUCTION BOOK (*1)	
A4	PQQW15312Z	LEAFLET, FAQ	
P1	PQPP10100Z	PROTECTION COVER (for Base Unit)	
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPK15244Z	GIFT BOX	
P4	PQPD10726Y	CUSHION	

31.4.2. KX-TG1106RUS/RUT

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV19CEX	AC ADAPTOR (for Base Unit)	⚠
A2	PQLV200CEX	AC ADAPTOR (for Charger Unit)	⚠
A3	PQJA10075Z	CORD, TELEPHONE	
A4	PQQX15244Z	INSTRUCTION BOOK (*1)	
A5	PQQW15226Z	LEAFLET	
A6	PQQW15312Z	LEAFLET, FAQ	
P1	PQPP10100Z	PROTECTION COVER (for Base Unit)	

Ref. No.	Part No.	Part Name & Description	Remarks
P2	PQPP10084Z	PROTECTION COVER (for Handset)	
P3	PQPP10086Z	PROTECTION COVER (for Charger Unit)	
P4	PQPK15255Z	GIFT BOX	
P5	PQPD10667Z	CUSHION	

31.5. Fixtures and Tools

Note:

(*1) See **The Setting Method of JIG (Base Unit)** (P.28), and **The Setting Method of JIG (Handset)** (P.36).

(*2) When replacing the Handset LCD, see **How to Replace the Handset LCD** (P.16).

Part No.	Part Name & Description	Remarks
PQZZTCD420BX	I2C PCB (*1)	
PQZZ1CD705BX	RS232C CABLE (*1)	
PQZZ2CD705BX	CLIP CABLE (*1)	
PQZZ3CD705BX	DC CABLE (*1)	
PQZZTG1105RU	BATCH FILE CD-ROM (*1)	
PQZZ430PIR	TIP OF SOLDERING IRON (*2)	
PQZZ430PRB	RUBBER OF SOLDERING IRON (*2)	

Memo

32 FOR SCHEMATIC DIAGRAM

32.1. Base Unit (SCHEMATIC DIAGRAM (BASE UNIT))

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

Important Safety Notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. This schematic diagram may be modified at any time with the development of new technology.

32.2. Handset (SCHEMATIC DIAGRAM (HANDSET))

Notes:

1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagrams may be modified at any time with the development of new technology.

32.3. Charger Unit (SCHEMATIC DIAGRAM (CHARGER UNIT))

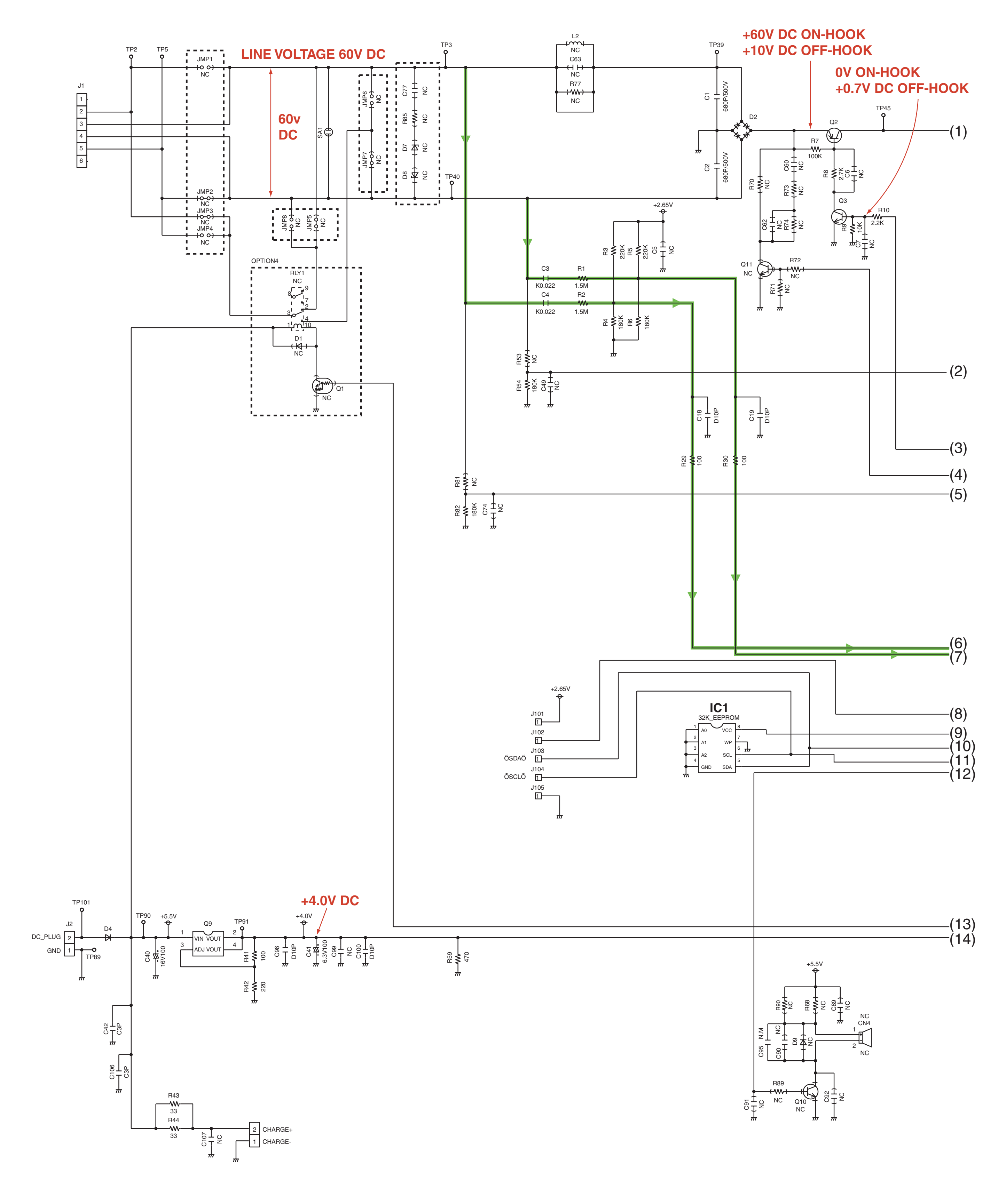
Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

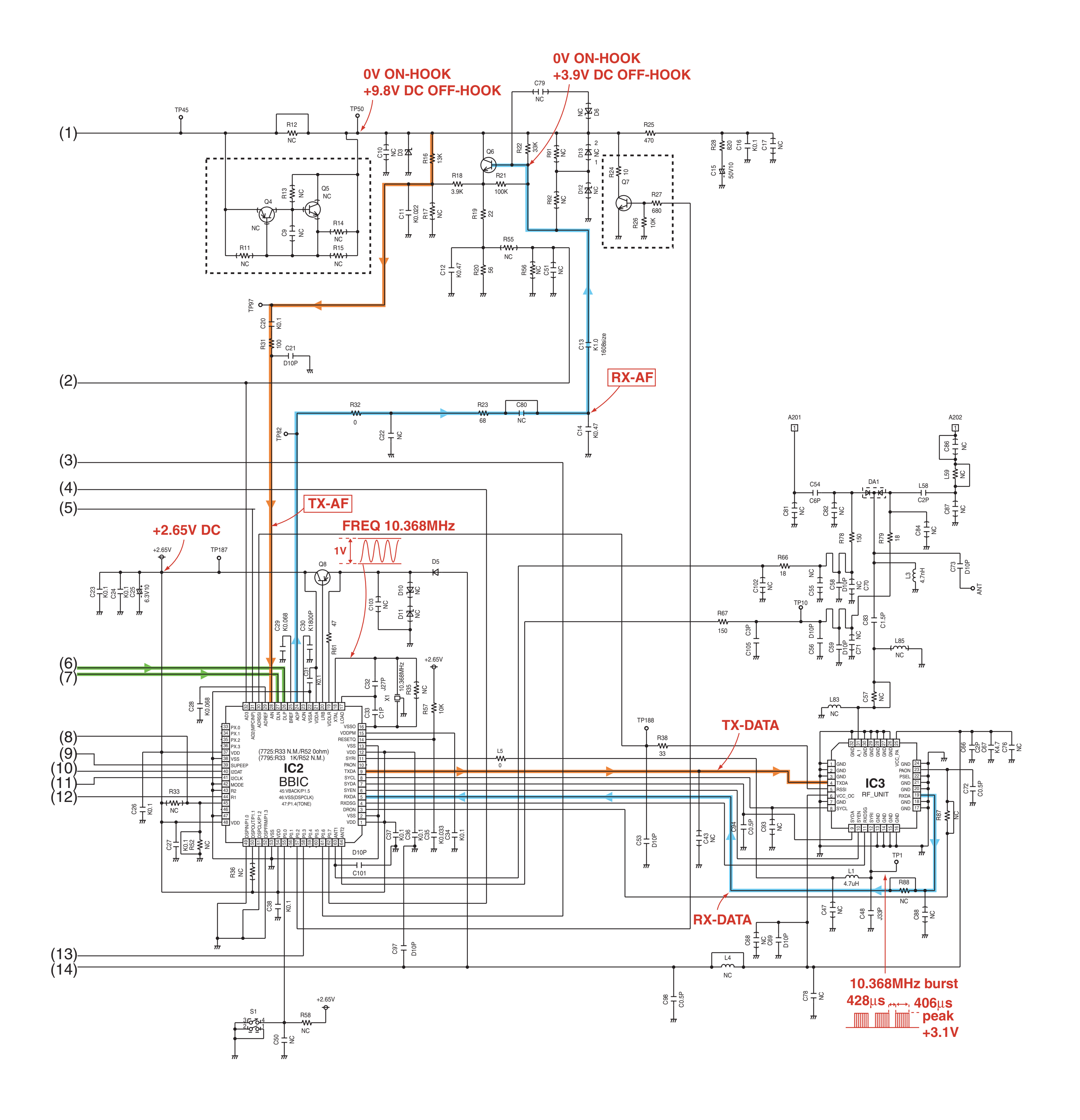
Important Safety Notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. This schematic diagram may be modified at any time with the development of new technology.

33 SCHEMATIC DIAGRAM (BASE UNIT)



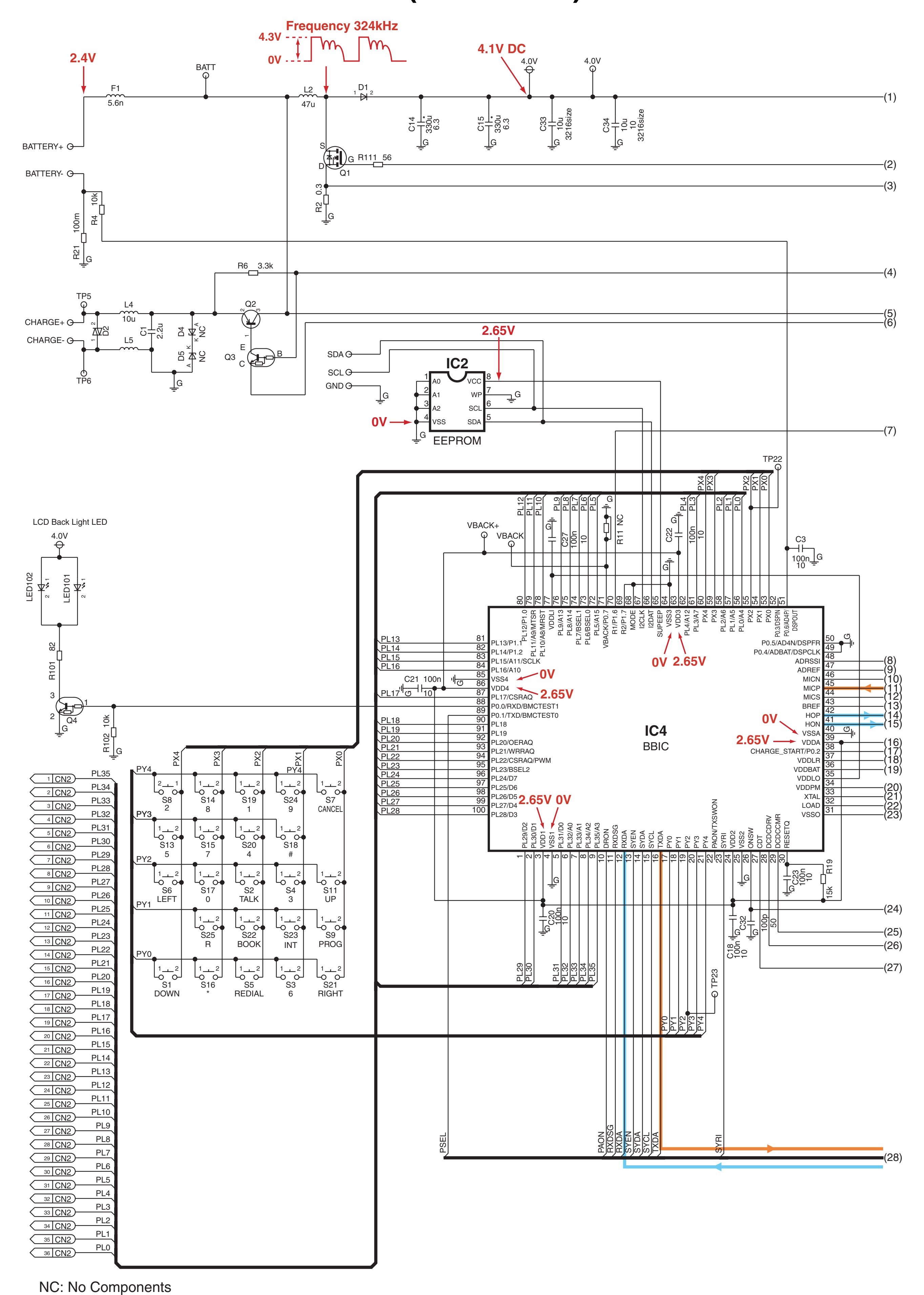
NC: No Components



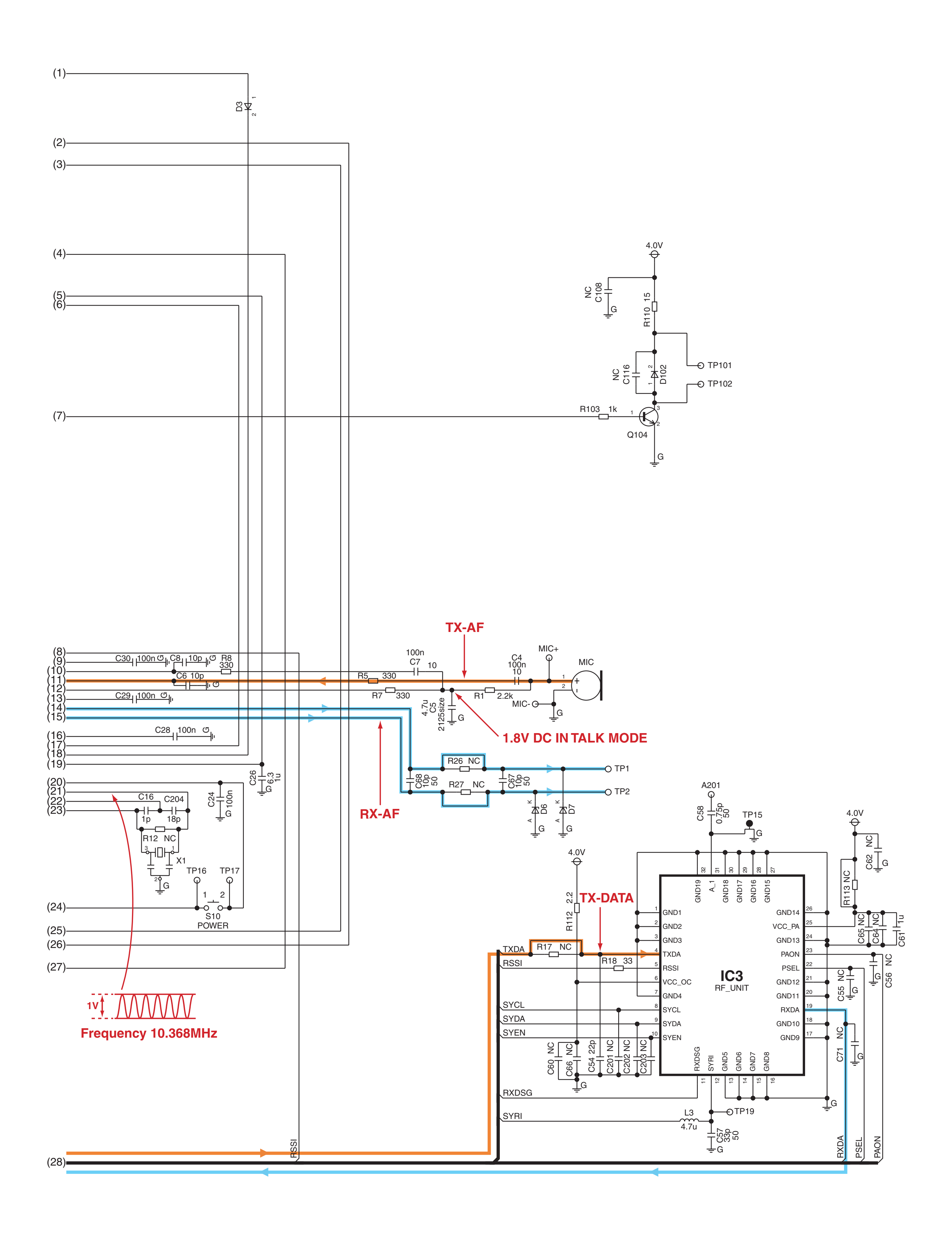
NC: No Components

KX-TG1105/1106 SCHEMATIC DIAGRAM (BASE UNIT)

34 SCHEMATIC DIAGRAM (HANDSET)



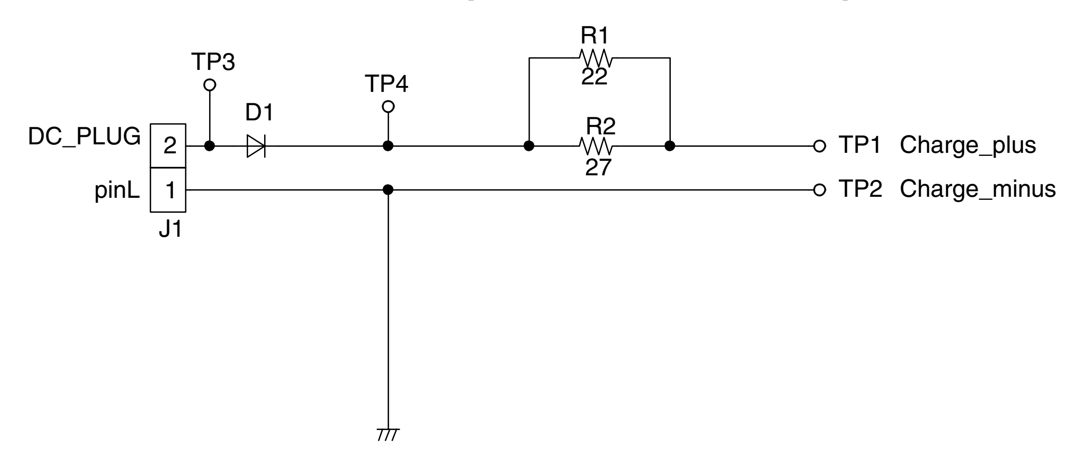
NC: No Components



NC: No Components

KX-TGA110 SCHEMATIC DIAGRAM (HANDSET)

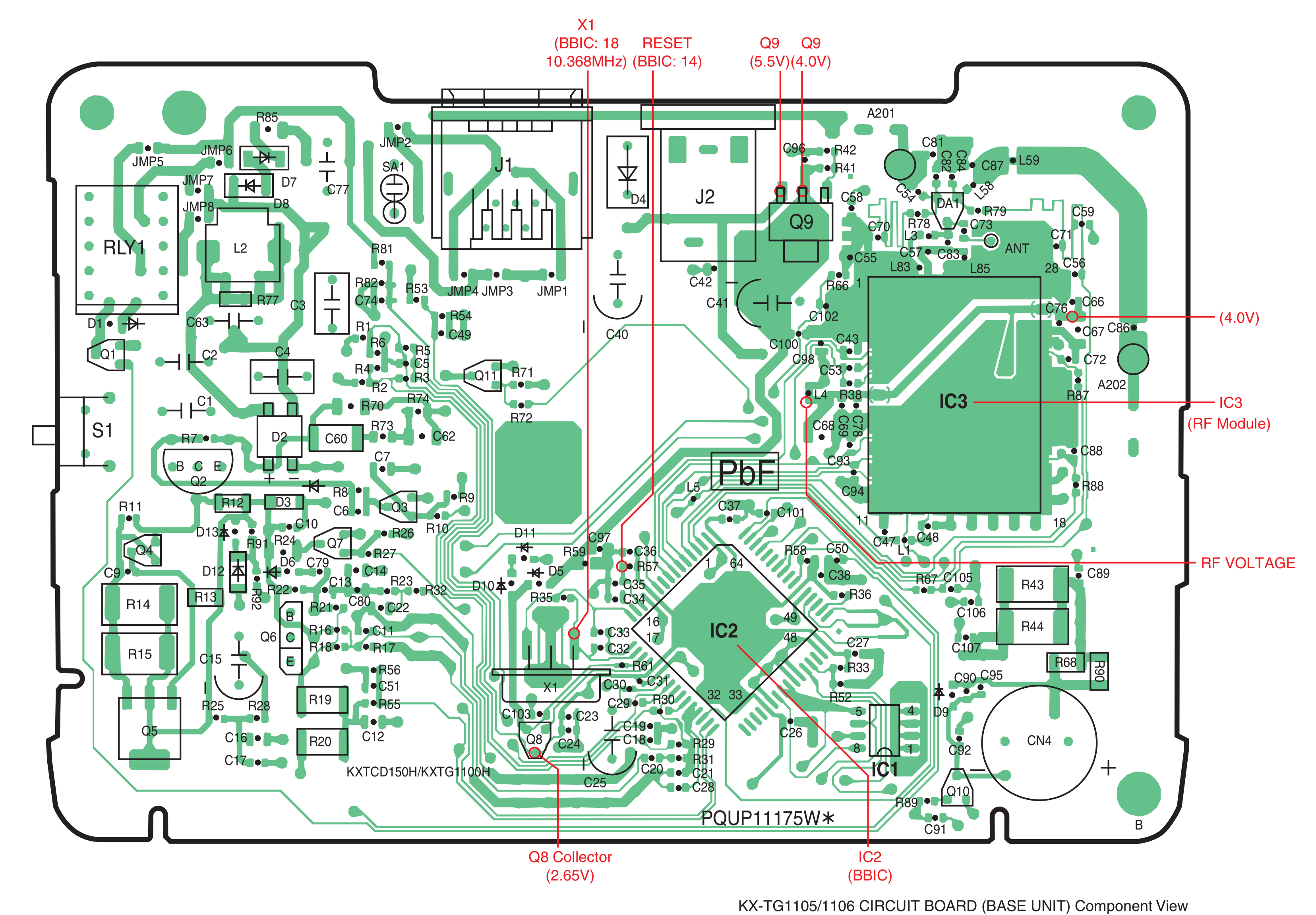
35 SCHEMATIC DIAGRAM (CHARGER UNIT)



SCHEMATIC DIAGRAM (CHARGER UNIT)

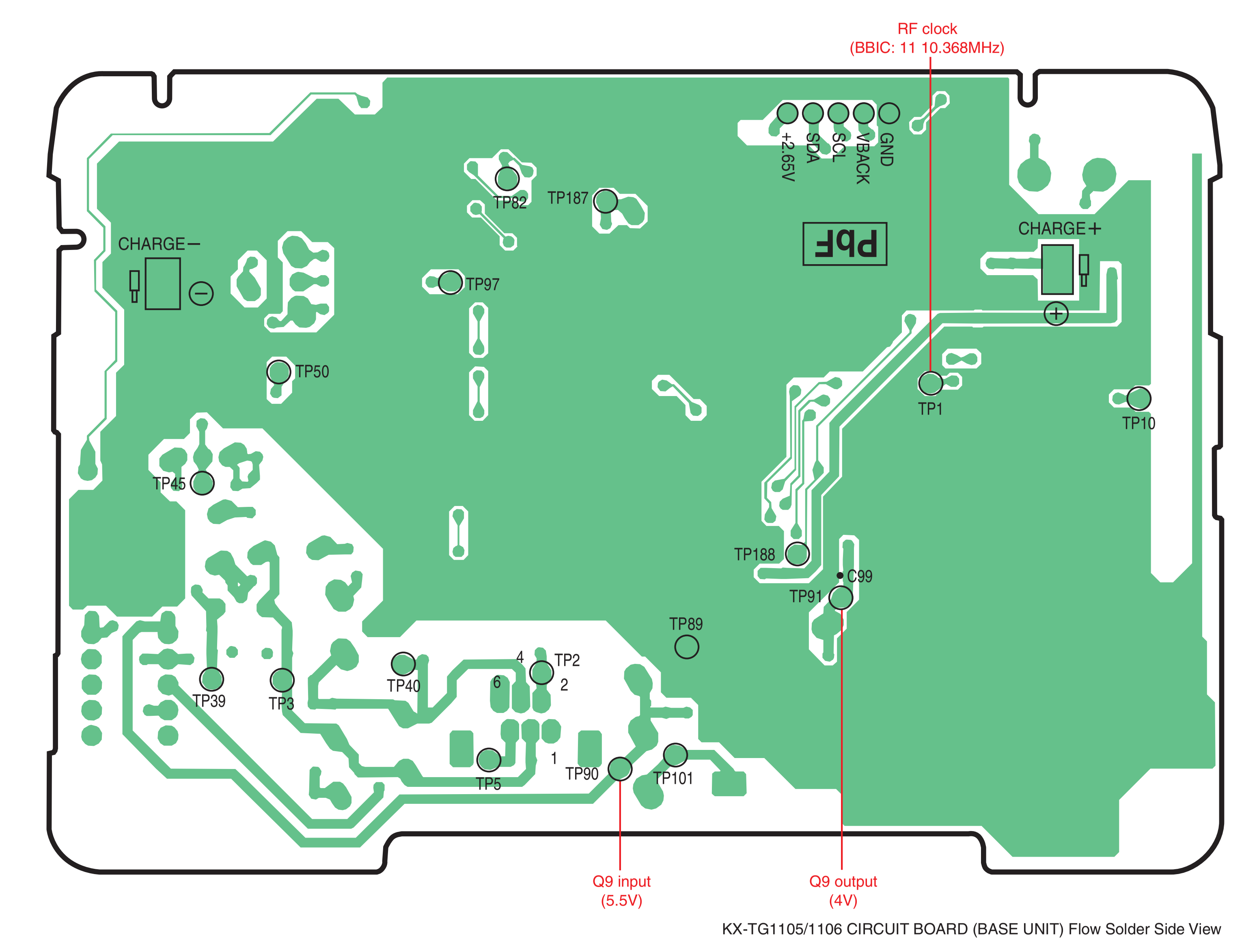
36 CIRCUIT BOARD (BASE UNIT)

36.1. Component View



KX-TG1105/1106 CIRCUIT BOARD (BASE UNIT) Component View

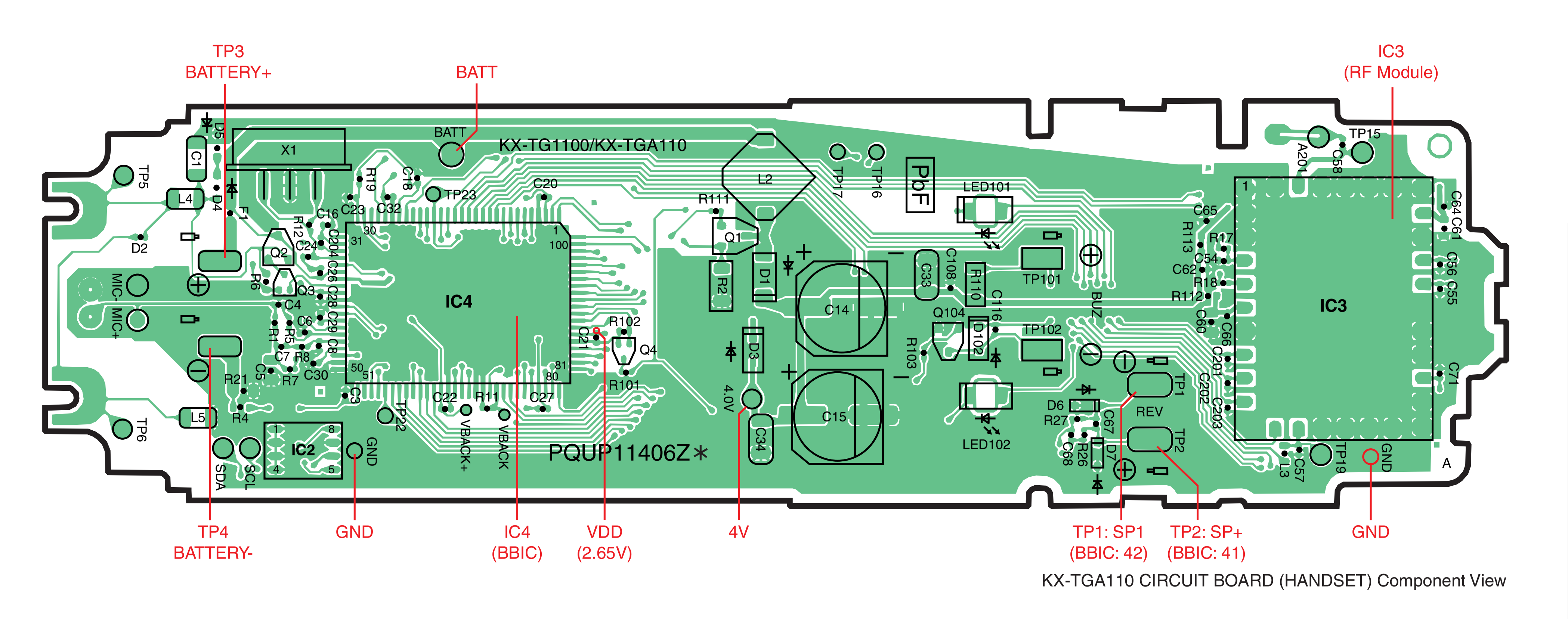
36.2. Flow Solder Side View



KX-TG1105/1106 CIRCUIT BOARD (BASE UNIT) Flow Solder Side View

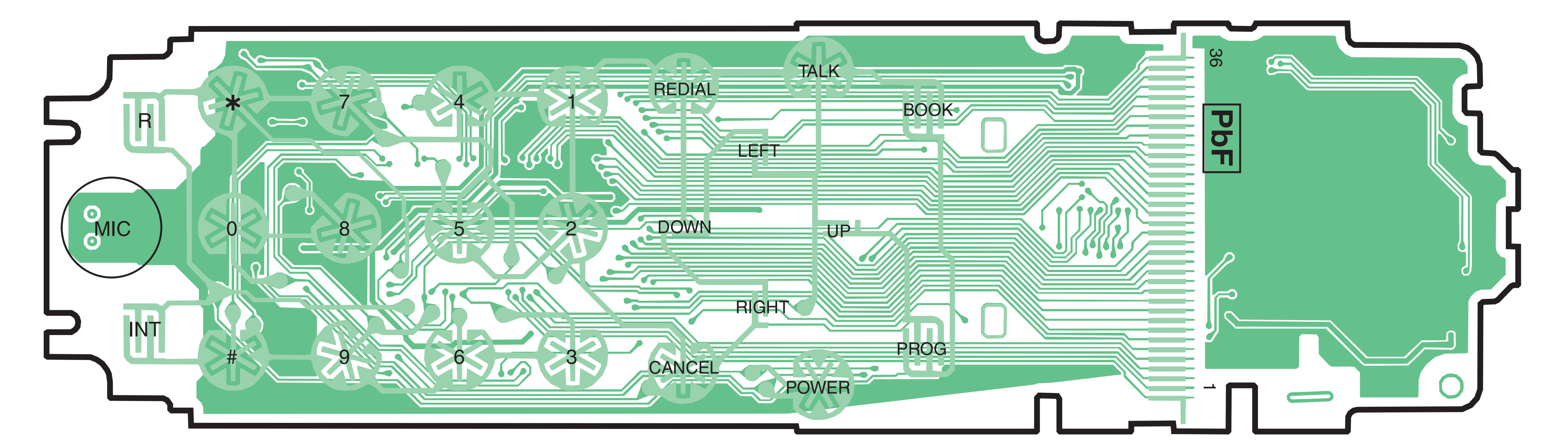
37 CIRCUIT BOARD (HANDSET)

37.1. Component View



KX-TGA110 CIRCUIT BOARD (HANDSET) Component View

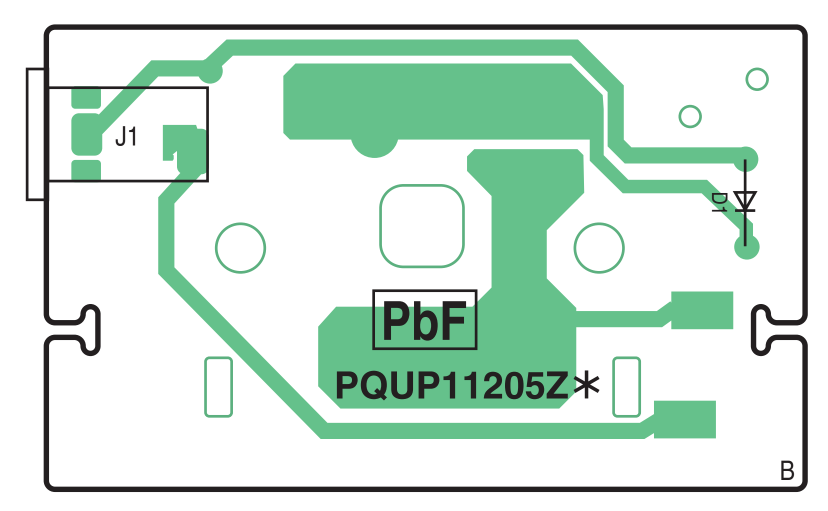
37.2. Flow Solder Side View



KX-TGA110 CIRCUIT BOARD (HANDSET) Flow Solder Side View

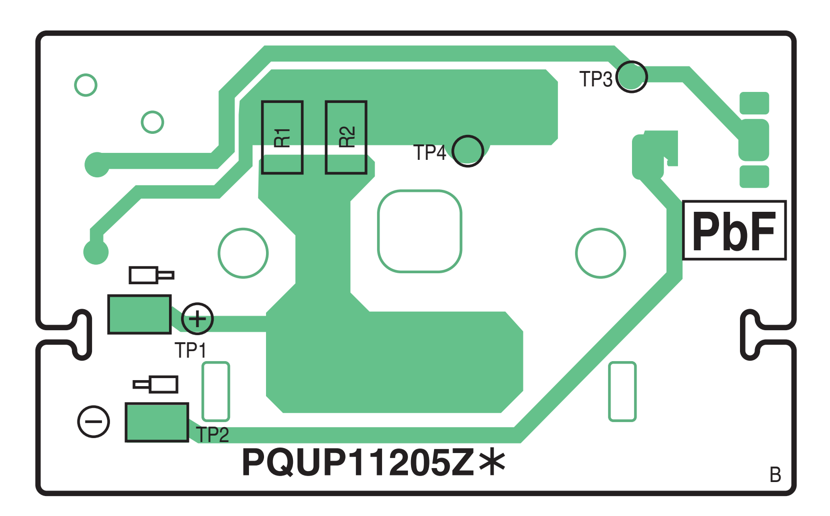
38 CIRCUIT BOARD (CHARGER UNIT)

38.1. Component View



CIRCUIT BOARD (CHARGER UNIT) Component View

38.2. Flow Solder Side View



CIRCUIT BOARD (CHARGER UNIT) Flow Solder Side View

G/I
KXTG1105RUS
KXTG1105RUT
KXTG1106RUS
KXTG1106RUT
KXTGA110RUS
KXTGA110RUT